6. ALASKA PENINSULA

(1) This chapter describes the S coast of the Alaska Peninsula from Cape Douglas to Isanotski Strait, as well as the Semidi Islands, Shumagin Islands, Sanak Islands, and many other smaller off-lying islands that fringe this part of the coast. Also described are Katmai Bay, Wide Bay, Chignik Bay, Stepovak Bay, Unga Strait, Pavlof Bay, Ikatan Bay, Isanotski Strait, and many smaller bays and lagoons, and the fishing communities of Sand Point, King Cove, Cold Bay, and False Pass. The N coast of the Alaska Peninsula is described in chapter 8.

(2) **Charts 16013, 16011.–Alaska Peninsula,** extending SW over 400 miles from Alaska mainland (59°30'N., 155°00'W.) to Isanotski Strait (54°52'N., 163°23'W.), is mountainous with many irregular and bold peaks reaching 2,000 to 9,000 feet. **Pavlof Volcano** (55°25'N., 161°54'W.), the most prominent of several active volcanos on the peninsula, has three symmetrical peaks in a general N-S line; the middle and highest peak rises to almost 8,300 feet. **Frosty Peak** (55°04'N., 162°50'W.), a conspicuous snowcapped mountain with several irregular peaks near the SW end of the peninsula, reaches nearly 5,800 feet. There are many lakes and sizable streams on the peninsula; several portages cross between the adjacent bays.

(3) The S coast of the Alaska Peninsula from Cape Douglas (58°51'N., 153°17'W.) to Cape Pankof (54°40'N., 163°02'W.) is irregular and broken by numerous indentations affording anchorage. Some settlements, canneries, and fishing stations are scattered along the coast and among the off-lying islands.

(4) Many of the points are high rugged cliffs with offshore reefs, while other points are low with shoal water extending from the shore. Kelp does not always mark rocks and shoals, especially in early or late summer. Sometimes only thin ribbon kelp grows on the dangers which is either drawn under by currents and seas, or cannot be seen until the kelp is entered.

(5) Many vessels from southeast Alaska use the Shelikof Strait route SE of the Alaska Peninsula to the Bering Sea. The route is described in chapter 3. The run between Shelikof Strait and Shumagin Islands is one of the most difficult in Alaska because of the prevalent thick weather and unknown currents. The current effect near Foggy Cape (56°31'N., 157°00'W.) is particularly confusing.

(6) **Local magnetic disturbance.**–Differences from the normal variation of as much as 14° have been observed along the Alaska Peninsula.

(7) **Currents.**–A continual current of considerable strength follows the coast all the way from Shelikof Strait to the Aleutian Islands. This W current is considered an eddy which accompanies the general E drift across the Pacific S of latitude 50°N., and forms a part of the general circulation of the North Pacific Ocean.

(8) The current along the Alaska Peninsula has been called a warm current originating in the Gulf of Alaska and it doubtless assists in causing the S side of the peninsula to be warmer than the Bering Sea side. It is also well known that the islands off this coast have a milder climate than the mainland; almost the entire population of the area is found on them as a result.

(9) The coastal current searches out all the passages, large and small, between and around the many islands, and in some of them it becomes strong enough to be important. An approaching NE storm gives warning by strengthening this current; in many places the current will indicate NE weather a day before the barometer falls. W winds weaken the current.

(10) On three runs between Chirikof Island and Castle Rock, a survey ship experienced a S set indicating an average strength of current of 1.5 knots.

(11) The tidal currents in the vicinity of the S coast of the Alaska Peninsula are strong in many of the constricted passages. In the open waters offshore they are generally weak.

(12) **Weather, Alaska Peninsula.**–Winds along the rugged Alaska Peninsula are local and variable. At Chignik, they are mostly from the W through NW in early winter, the SE in midwinter, and SE through SW from March through September. Strong winds often blow from the Bering Sea through the mountain pass over Chignik Lake. In the Shumagin Islands, summer winds are often out of the SW, while winter winds frequently blow out of the S. At Cold Bay, southeasterlies are common all year around. Northwesterlies are also frequent in winter. In summer, west through NW winds are common. In winter, windspeeds at Cold Bay average 15 knots and reach gale force about two percent of the time.

(13) Annual rainfall ranges from 20 to 60 inches (508 to 1524 mm), with heaviest amounts usually occurring on the SE side of the peninsula. At Cold Bay, which averages 36 inches (914 mm) annually, measurable precipitation falls on 320 days in an average year; on nearly half of those days, it snows. September through November are usually the wettest months, while snow is common from October through April.

(14) January and February are usually the coldest months of the year. The average daily maximum is around the freezing mark (0°C) or above on the southeast side of the peninsula, and 3 or 4 degrees cooler on the NW side. Average daily minimum temperatures on the SE side range from 16°F (-8.9°C) in the north to 28°F (-2.2°C) in the S. On the NW side, they fall to an average of 16°F (-8.9°C) at Port Heiden, increasing to 28°F (-2.2°C) to the S and decreasing to below 10°F (-12.2°C) to the N. At Cold Bay, extreme low temperatures have fallen to -13°F (-25°C, March 1971), while Coal Harbor has recorded a -19°F (-28.3° C) temperature. Temperatures climb steadily from March through early August. In August on the average, daytime highs range in the mid-fifties (12° to 13°C) to low-sixties (16° to 18° C), while nighttime lows drop into the mid- to upper forties (7° to 9°C). Extreme temperatures have reached the mid-eighties (28° to 31°C) at sheltered locations. The all-time high for Cold Bay is 77°F (25°C) recorded in July 1960.

(15) Though fog may be encountered along this coast at any time during the summer, it is most prevalent from June through September. The SE winds bring in the fog banks that lie over the North Pacific. Fog is reported on an average of 18 to 25 days per month at Cold Bay in mid-summer; however, visibilities fall below two miles (4 km) on only about three to six days. Fog often hangs about the headlands and entrances to bays when the upper parts of the bays are clear. Land fog and precipitation reduce visibilities in winter.

(16) All harbors on the SE side of the peninsula are free from ice and open to navigation throughout the year. Pack ice has been known to drift through Isanotski Strait and interfere with navigation in Ikantan Bay.

(17) **Prominent points and most off-lying islands on the S side of the Alaska Peninsula are adequately charted. However, much of the coast between Cape Douglas and Chignik Bay has not been surveyed. Notes on the unsurveyed portions are from the most reliable sources available; these waters should be used with caution.**

(18) **Chart 16580.–Cape Douglas** (58°51'N., 153°17'W.), the mainland promontory on the W side of the N end of Shelikof Strait, is a grassy peninsula about 3 miles long and 190 feet high. At its W end it breaks off in a bluff to a low, narrow neck which connects it to the mainland. Rocks that uncover, extend about 0.2 mile E from the cape.

(19) The three points on the SE side of Cape Douglas and the small projecting point on the mainland in 58°49.8'N., 153°21.3'W., about 1.5 miles SW of Cape Douglas, are reported to be distinctive radar targets at 10 miles.

(20) In 1971, the NOAA Ship RAINIER reported that good anchorage in 12 fathoms, very even sand and mud bottom, good holding ground, and sheltered from W and N weather, could be found about 1.5 miles S of Cape Douglas and about 1.5 miles off the mainland shore. There is some shelter from SW and NE winds, but if heavy, NE swells roll around the point. In making the anchorage, keep 2 miles NE of the 28-foot-high rock near the center of Douglas Reef, and maintain a distance of 1.5 miles off the mainland shore when anchoring. The small projecting point on the mainland, 1.5 miles SW of Cape Douglas, is a good radar target for approaching the anchorage, and the 28-foot-high rock is also a good radar target at 5 miles, but only when the tide is high enough to cover the rest of the reef (half tide or higher).

(21) **Mount Douglas,** 7,064 feet high, and **Fourpeaked Mountain,** 6,903 feet high, are snow-covered mountains W and SW, respectively, of Cape Douglas.

(22) **Douglas Reef,** 5.5 miles S of Cape Douglas, is about 2 miles in diameter. Part of the reef uncovers; near its middle is a rock 28 feet high. A sounding of 6 fathoms with 40 to 60 fathoms close-to was obtained 1 mile 081° from the rock. Several rocks, close together and awash at high water, are 2.8 miles SW from Douglas Reef and 1.5 miles offshore. A reef bare at low water extends about 0.8 mile SE from them. About 10 miles SW of Cape Douglas is a point marked by a hill 673 feet high. In the valley S of the point is a small glacier. About 1.2 miles from the point and 168° from the hill is a rock awash at about half tide. There is no kelp on the rock, and the sea seldom breaks on it when it is covered.

(23) Two submerged rocks with kelp patches are about 1.5 miles SW of the preceding rock and the same distance from shore. The kelp shows well only at low water, and the sea seldom breaks on the rocks.

(24) Dangerous pinnacles are in the area N of 58°40.0'N., and W of 153°27.0'W., about 5.5 miles NNE of Kiukpalik Island. Mariners are advised to exercise extreme caution while navigating in the area.

(25) **Kiukpalik Island,** 17.5 miles SSW of Cape Douglas and 2 miles offshore, is 1.2 miles long, 155 feet high, nearly level, and grass covered. A reef with a submerged rock at its outer end extends about 0.3 mile N of the island and, a shoal, scantily marked by kelp, is about 0.5 mile NW of the island. The channel between the island and these outlying dangers is not safe. Temporary anchorage, with shelter from E winds, can be had in the bight on the W side of the island in 8 fathoms, muddy bottom. The mainland opposite the island should be avoided, as there is a possibility of shoals on that side.

(26) **Shakun Rock,** a prominent dark pinnacle 50 feet high, is 5 miles 232° from Kiukpalik Island. From the rock, a semicircular reef, partly bare at low water, extends NE 2 miles and S and W to the S end of the chain of grass-covered **Shakun Islets.** A 1975 survey indicated that the channel between the islets and the reef was clear of rocks and had depths of 1½ to 3 fathoms. The waters between the N tips of Shakun Islets and the reef that extends NE of Shakun Rock and the S side of Kiukpalik Island are clear, with depths of 5 to 10 fathoms. The waters between the mainland and Shakun Islets are free of danger, except for reefs just off the mainland. Depths of 1 to 3 fathoms are in this area.

(27) **Swikshak Lagoon,** about 5 miles N of Shakun Islets, is a lagoon which is practically closed at all stages of the tide. The entrance is about 200 feet wide and rocky. Depths inside the lagoon average less than 1½ fathoms. Just SE of the lagoon entrance is a group of reefs, one of which is bare at all stages of the tide.

(28) **Kaguyak,** an abandoned village in ruins, is behind a large bare rock that is joined to the beach at low water. Approaching from SE, a Coast Guard vessel anchored in about 7 fathoms, hard sand bottom, with Cape Chiniak bearing 205°, Shakun Rock 096°, and the rock in front of Kaguyak 346°. Between Cape Chiniak and Shakun Rock, the bottom was found to be uneven, depths 10 to 30 fathoms, mud and hard sand alternating.

(29) **Cape Chiniak,** the N point of Hallo Bay, is 27.5 miles SSW of Cape Douglas. It has a high hill near its end.

(30) **Hallo Bay,** between Cape Chiniak and Cape Nukshak, is 6 miles wide and ends in tidal flats that extend out up to 0.5 mile along the head of the bay.

(31) **Ninagiak Island,** in Hallo Bay, has a knob 305 feet high. A rock, bare at most stages of the tide, is 0.7 mile SE of the island. A reef extends 0.3 mile NE of the rock, and a submerged rock is 0.3 mile SW. Good anchorage, open to NE weather, can be had close into the mainland between the island and the tidal flats to the W. Safe passage can be made on either side of the small island 0.5 mile SW of Ninagiak Island, but the passage between the N side of Ninagiak Island and the mainland is foul.

(32) A reef, about 1.2 miles long E and W, is in Hallo Bay about midway between Ninagiak Island and Cape Nukshak. The reef is bare in places at low water and has no kelp.

(33) **Charts 16576, 16603.–Cape Nukshak** (58°23.5'N., 153°59.0'W.), 36 miles SW from Cape Douglas, is flat and grass covered to the foot of a prominent sharp peak. Just off the cape is narrow **Nukshak Island,** which is 0.5 mile long, 133 feet high, and has two knolls. Between the island and the cape is a narrow passage about 75 yards wide that has a depth of 5 fathoms in midchannel. A prominent pinnacle is close to the W end of the island. Anchorage and shelter from W winds can be had 0.2 mile S of the island in 10 fathoms, pebble bottom. In 1972, the NOAA Ship RAINIER anchored in 31 fathoms, hard bottom, with the pinnacle bearing 233°, 0.6 mile.

(34) A large reef, that uncovers 9 feet, is 0.5 mile off the mainland and 1.8 miles SW of the outer end of Nukshak Island. A rock, awash and marked by kelp, is 0.6 mile ESE of the reef. From Cape Nukshak to Kukak Bay the cliffs along the shore are irregular, and numerous high-water and submerged rocks extend about 1 mile offshore.

(35) **Yugnat Rocks,** about 3 miles SW of Cape Nukshak, are several prominent rocks about 20 feet high. The area around the

rocks is foul and ships are warned to keep outside the 20-fathom curve.

(36) **Kukak Bay,** between Cape Nukshak and Cape Ugyak, has depths as great as 66 fathoms and extends inland about 6 miles. The entrance is 0.6 mile wide and is easy of access. The shores are steep in most places and anchorage area is limited.

(37) **Kukak Point,** 4.5 miles SW of Cape Nukshak, is low and grassy; a reef extends 0.5 mile SE from the point. **Devils Cove,** between Kukak Point and **Tiny Island,** has a flat muddy bottom and depths of 3 to 7 fathoms. Located at the E end of Devil's Cove is a privately owned lodge receiving periodic seaplane traffic during the summer months. There is a waterfall at the W end of the Cove. Entrance to the cove is obstructed to the SE by two rocks, and by a foul area with rocks and kelp in the center of the entrance. These features cover at high water. The best passage into the cove is between Tiny Island and the foul area at mid-entrance. Mariners unfamiliar with the area are cautioned to enter at low stages of the tide and only if the reefs and rocks are visible.

(38) On the S side of Kukak Bay are two islands; **Aguligik Island** is just inside the entrance and **Aguchik Island** is near the head of the bay. The ruins of an abandoned salmon and clam cannery are in the small cove opposite the E side of Aguligik Island. The ruins of the cannery wharf bare at extreme low water. Aguchik Island connects with the shore at low water.

(39) Cannery tenders formerly anchored in a small bight S of Aguligik Island in 28 fathoms, mud bottom. In 2000, NOAA Ship RAINIER anchored in this bight 0.3 mile S of Aguligik Island in 37 fathoms, mud bottom, and found the bight to be protected from most winds. A large anchorage is also available S of Aguchik Island in 11 to 27 fathoms. Mariners should note that the sand and gravel bar from the river at the head of Kukak Bay had extended itself approximately 0.2 mile seaward in 2000. Both anchorages afford good protection against wind and swell. The holding bottom is good. The diurnal range of tide is about 13 feet, and the currents are negligible.

(40) A reef, covered 8 feet, is near the center of the inner part of Kukak Bay. The reef is 0.5 mile from the N shore, 0.8 mile from the S shore, and about midway between Aguligik and Aguchik Islands.

(41) **Cape Ugyak,** 8 miles SW of Cape Nukshak, is the E end of the mountainous peninsula between Kukak and Kaflia Bays. **Kulichkof Island** is a small grass-topped islet 0.2 mile N of the cape.

(42) The area N of Cape Ugyak is foul for a radius of about 2 miles. Bare and covered rocks, and reefs are numerous. A rock awash, not marked by kelp, is 1.3 miles NNW from Kulichkof Island and 0.8 mile off the mainland. There are, however, heavy patches of kelp in the vicinity of Kulichkof Island and neighboring reefs. A rock covered 11 feet is 0.8 mile NNE of Kulichkof Island; a small patch of kelp is visible only at extreme low tides. A small rock covered 3 feet is 0.3 mile NE of the Kulichkof Island; a small patch of kelp is visible on the lower tide.

(43) **Kaflia Bay,** between Capes Ugyak and Gull, has at its head two small basins with depths of 20 to 35 fathoms in the middle and joined by a very narrow channel which passes S of a large islet just off the N shore. The channel into the first basin is about 30 feet wide and subject to very swift currents during ebb and flood. Approach the channel S of several rocks in the entrance, then turn N passing between the rocks and islet in the center. Hug the E and N sides of the islet as you pass around. The channel has depths of 2 to 3 fathoms but is not recommended to those unfamiliar with the area.

(44) In the outer bay, a rock, which bares at low water, is 0.6 mile SW of the prominent point on the N side.

(45) **Charts 16576, 16580.–Cape Gull,** about 47 miles SW of Cape Douglas, is a bold headland, terminating in a cliff 503 feet high. Temporary anchorage can be had in the cove on the S side in 9 fathoms, sandy bottom. The S point of the cove is a rocky islet about 15 feet high. Foul ledges and reefs extend seaward 0.6 mile from this point to a small grassy island. Dangerous pinnacles are in the area extending about 0.5 mile N, 0.5 mile E, and 1.5 miles S of the island. Mariners are advised to exercise extreme caution while navigating in the area.

(46) Between Kaflia Bay and Cape Gull, the bottom is irregular and rocky for a distance of 1 mile offshore and should be avoided.

(47) **Cape Kuliak,** 52.5 miles SW of Cape Douglas, is the outermost headland on the midsection of Shelikof Strait's W shore. The cape rises gradually from a crumbling bluff at the end to high mountains inland.

(48) **Kuliak Bay,** immediately N of Cape Kuliak and locally known as **Halferty Bay,** is over 4 miles long and 3 miles wide at its entrance. The only obstruction in the entrance is a rock awash about 1.25 miles SW of the small grassy island off the point S of Cape Gull. The area between this rock awash and the N shore of the bay is generally foul and should be avoided. A shoal, covered about 4½ fathoms, is about 1.25 miles SE of the rock awash.

(49) The head of Kuliak Bay is separated into two arms by a peninsula. The S arm is deep and clear of hazards except for a pinnacle covered 4 fathoms in its center. The N arm contains a basin 0.7 mile long with depths of 8 to 15 fathoms but it is separated from the outside bay by a sandbar extending 0.3 mile from the NE shore. The basin is entered through a narrow channel, about 75 feet wide, with depths of about 2 fathoms; the channel is discernable only a low tides.

(50) **Missak Bay,** between Capes Kuliak and Atushagvik, is nearly 4 miles long and has deep but good holding ground. A reef and bare rocks extend from the N shore, and rocks are close to the S shore. A midchannel course should be steered into the bay.

(51) The 231-foot NOAA Ship FAIRWEATHER anchored in Missak Bay in July 1975, but experienced no storms during this period.

(52) **Cape Atushagvik** is 4.2 miles **225°** from Cape Kuliak. It has a low bluff at the water, and rises in a gentle slope to a prominent knoll, 904 feet high, with a decided saddle between it and the higher land farther back. A reef with a submerged rock at its outer end, marked by kelp, extends 0.7 mile S of the cape.

(53) Between Capes Atushagvik and Ilktugitak are Kinak and Amalik Bays. **Kinak Bay** is over 8 miles long and about 3 miles wide at the entrance. On the E side of the bay, 1.5 miles NW of Cape Atushagvik, is a low peninsula 0.6 mile long, with a bluff 150 feet high near its end. **Russian Anchorage,** on the N side of the peninsula, has good holding ground, 300 to 500 yards from shore, in 10 to 18 fathoms. Water, except during dry periods, can be obtained by boat. The only directions necessary are to give Cape Atushagvik a berth of about 1 mile and the islands on the SW and the Russian Anchorage peninsula a berth of at least 0.5 mile. The final course into the anchorage should be SE straight toward the middle of the bight. The bottom levels out between 15 to 20 fathoms where large vessels should anchor. This anchorage

is completely protected but is subject to williwaws, during northerly blows, with gusts comparable in force to those blowing simultaneously in Shelikof Strait.

(54) The remainder of Kinak Bay is mostly deep. When en route to **Hidden Harbor,** at the head of Kinak Bay, favor the W side of the bay to avoid reefs and rocks awash on the E side. Take care to avoid the rock awash at 58°09.6'N., 154°26.8'W. The entrance to Hidden Harbor is constricted by ledges on both sides. The channel is about 20 yards wide, clear of obstructions, and 2 to 3 fathoms deep at midchannel. The harbor offers good anchorage for small craft. Fresh water is available from a stream on the SW side of the harbor.

(55) **Amalik Bay,** 3 miles W of Kinak Bay, is separated from Kinak Bay by a high peninsula and numerous small islands. Takli Island, the largest of these islands, is in the entrance to the bay. About 0.6 mile N of Takli Island is an inner chain of islands that extend 1.5 miles W from the high peninsula. Small vessels can find excellent anchorage with good holding ground and protection from any weather in the basin to the N of the chain of islands. Enter Amalik Bay W of Takli Island, and then around the W side of the chain of islands to the anchorage. Avoid the foul areas which extend about 300 yards N from the westerly and northerly islands in the chain.

(56) **Takli Island**is about 2 miles long, and its E part is low, broken, and rocky. At its W end, a hill, 455 feet high, has a sheer drop to the water. A chain of reefs and rocky islands extend 1.5 miles E from Takli Island. Passage between them is dangerous and should be avoided. When navigating between Amalik Bay and Kinak Bay through the passage N of Takli Island, keep to the center of the channel and pass to the N of the islands at 58°04.8'N., 154°25.5'W.

(57) About 3 miles NW of Takli Island at the head of Amalik Bay is **Geographic Harbor.** The middle of the narrow channel leading into the harbor has a least depth of 5¼ fathoms and is clear of obstructions, except for a rock awash and a 2½–fathom shoal off the NE shore at about 58°06.2'N., 154°33.8'W., and 58°05.5'N., 154°32.7'W., respectively. Geographic Harbor is actually two large bays and two narrow fjords that branch from the entrance channel. The bays are separated by two prominent islands. The S bay is deep and offers numerous anchorages. The N bay is shoal on the N and W sides but offers some anchorage for smaller vessels. The fjords are narrow with uneven bottom and should be avoided.

(58) **Cape Ilktugitak** (58°01.5'N., 154°35.0'W.), just SW of Takli Island, is fairly low, but rises rapidly to the high land back of it. Between the cape and Takli Island is a small islet. The passage between this islet and Takli Island is clear. A reef extends from this islet toward the S and SE for 1.5 miles with numerous submerged rocks. Vessels should stay outside the 25-fathom curve when navigating in this area.

(59) The passage between the small islet and Cape Ilktugitak has depths of 5 to 10 fathoms, except for lesser depths over the pinnacles which are scattered throughout the area.

(60) The steamer GOLDEN FOREST was lost on the S side of Cape Ilktugitak in 1929. In 1980, the remains of the steamer were visible on the beach and in the surf in 58°01.6'N., 154°35.7'W.

(61) **Dakavak Bay,** between Cape Ilktugitak and Katmai Bay, is foul along the W side. A foul area that bares is near the center of Dakavak Bay in about 58°02.1'N., 154°41.6'W. Depths from 8 to 23 fathoms are in the E half of the bay. Fair anchorage, but exposed to S and SW winds, can be found in the NE corner of the bay about 0.5 mile from shore in 15 to 18 fathoms, mud bottom.

(62) Vessels transiting between Dakavak Bay and Katmai Bay should stay at least 1.5 miles offshore because the area is foul in places. An extensive foul area with submerged rocks and rocks awash extends 1.5 miles SW of the W point of Dakavak Bay.

(63) **Katmai Bay** is a large roadstead which offers protection from N, NW, and W weather. In 1980, hydrographic surveys by the NOAA Ship DAVIDSON revealed that the bay has several large submerged reefs with least depths of 4 to 8 fathoms. In the NW corner of the bay, about 0.5 mile offshore, is a reef with a least depth of 2 fathoms, in 57°58.2'N., 155°00.4'W. In the NE corner of the bay is a reef with a least depth of 2¾ fathoms, in 58°00.0'N., 154°50.2'W.

(64) **Katmai River,** its head extending to Mount Katmai before the eruption in 1912, was navigated by launches at high tide to the abandoned village of Katmai. In 1980, the river was choked with pumice which washes down from the higher slopes faster than the stream can dispose of it. Occasional steam and smoke from Mount Katmai volcanic activity can be seen in the area. Strong N winds raise large clouds of pumice which cause a murky haze throughout the area.

(65) The area in the vicinity of Mount Katmai from Cape Douglas to Cape Kubugakli is the **Katmai National Park.** The most spectacular feature of the park is the mountain-encircled **Valley of Ten Thousand Smokes** in the NW portion of the reservation. Here the ground is broken open, giving vent to several million fumaroles or little volcanoes, from which rise jets of steam. Some of the jets throw their steam 1,000 feet into the air, and hundreds of others go up to a distance of 500 feet, all merging above the valley into one colossal cloud.

(66) **Kashvik Bay,** just SW of Katmai Bay, offers good anchorage in 10 fathoms or less near the center of the bay. A submerged reef extends about 0.8 mile from the N shore, and scattered rocks are close off the SW and W shores. The entrance and middle of the bay are free of hazards.

(67) **Mount Katmai,** a volcano 6,715 feet high, is part of a high ridge and is not easily distinguishable from Shelikof Strait. In 1912 this volcano gave vent to a violent eruption, the initial stages lasting three days, during which several cubic miles of material were emitted. This eruption was of such violence as to rank in the first order of volcanic explosions. The volcano is now quiet and in its crater is a lake over 1 mile long and about 1 mile wide.

(68) **Mount Mageik,** a volcano 7,250 feet high, is about 10 miles SW from Mount Katmai. It has a more definite summit and can be easily identified from Shelikof Strait.

(69) **Cape Kubugakli,** 83 miles SW of Cape Douglas, is bold and rises rapidly to **Mount Kubugakli,** a prominent mountain with two summits. The 2,920-foot S peak is the higher. The area off Cape Kubugakli is foul and should be given a wide berth.

(70) **Alinchak Bay,** opening S of Cape Kubugakli, is divided into two arms. **Little Alinchak Bay,** the S arm, is shallow with extensive foul areas and should be avoided by those without local knowledge. **Big Alinchak Bay,** the N arm, is an excellent harbor of refuge with protection from all but NE and E winds. The center of the arm has good anchorage in 10 fathoms, mud and fine sand bottom. Depths decrease to 2 fathoms in the NW and SW corners. Vessels should keep 0.5 mile off the N shore of the bay and 0.15 mile off the S shore. The approach to Big Alinchak Bay is from SE on a course midway between the extensive foul area off the

mouth of Little Alinchak Bay and a 7-fathom shoal in about 57°48.0'N., 155°13.0'W.

(71) **Cape Kekurnoi,** between Alinchak and Puale Bays, is fairly low, but rises gradually to over 1,500 feet. Reefs and rocky islets extend 3.5 miles S from the SW tip of the cape. There are bad tide rips off these reefs, which is frequently the case along the W side of Shelikof Strait.

(72) **Puale Bay** is open to the S and is only partly protected on the E by the reefs and islets extending S from Cape Kekurnoi. The N shore has low rocky bluffs and small rocky beaches. The W shore has two long sandy beaches separated by a rocky bluff 400 feet high. The SW shore is formed by the bold rocky bluffs of Cape Aklek.

(73) The E and NE sections of the bay have numerous dangerous rocks, reefs, and foul areas. There is a large kelp forest foul with reefs and rocks 1.0 mile off the E shore of the bay in about 57°44.0'N., 155°29.0'W., that should be avoided. The W part has fairly regular sand bottom. Reefs and kelp-covered rocks extend 0.2 to 0.4 mile off the E side of Cape Aklek.

(74) **Routes, Puale Bay.**–From Shelikof Strait steer a course of **325°** for the highest point on Cape Aklek. When about 2.4 miles off the cape, change course and steer about **015°** through the bay entrance for about 4.5 miles to a point in about 57°42'N., 155°31'W. From this point, the vessel can proceed to a variety of anchorages in the inner bay. By steering **338°** for 4.5 miles the vessel will find anchorage near the head of the bay in 10 fathoms on even sand bottom. If seeking shelter from S winds and seas, the vessel may run 2.5 miles on course **276°** to anchorage in 10 fathoms. Protection from E to N winds may be found by steering **075°** for 3 miles to anchorage in 12 fathoms, taking care to avoid the 3½-fathom rock in 57°43'N., 155°27'W.

(75) There are no satisfactory ranges for entering the bay but they are unnecessary. Cape Aklek can be approached with safety on any heading between **305°** and **020°.** The channel between the 10-fathom curves at the entrance to the bay is over 2 miles wide.

(76) Fishing craft sometimes enter the bay from the E, using a narrow channel between the mainland and the S rocky islets. This channel has a least depth of 6 fathoms but is only about 350 yards wide, is bordered by kelp-covered rocks, and has a 4-fathom rock near its outer end. Extreme caution should be used when transiting this route.

(77) Anchorages in Puale Bay are indifferent to poor. There is no protection from SE weather. S swells enter the bay a large part of the time and increase in size in the shoal water. Williwaws are frequent. Even in W weather the winds funnel through the low passes to the W of the bay with greater velocity than that encountered in Shelikof Strait.

(78) **Cape Aklek,** the most prominent headland in the vicinity, rises to 1,877 feet within 0.6 mile of the shoreline in a series of bare slides, bluffs, and cliffs. Two large rocks about 75 feet high are off its S and SE shores, but they are inconspicuous from seaward against the rocky background of the cape.

(79) **Dry Bay** is between Cape Aklek and Cape Unalishagvak. As the name implies, the entire inner bay bares at low water. The outer bay has a rocky, irregular bottom. Here again williwaws are frequent and W winds are increased in violence in the low passes to the W.

(80) **Chart 16570.–Jute Bay** is between **Cape Unalishagvak** and **Cape Kanatak.** The part inside **Jute Island** is called **Island Bay**. Reefs marked by kelp and breakers extend SE from Jute Island and WSW from the E side of Island Bay to about halfway to Jute Island; both reefs tend to break the swells during SE winds. The channel between the reef extending WSW and the island has depths ranging from 11 to 5 fathoms. The channel W of Jute Island has depths of 1¼ to 5 fathoms, but its S end is obstructed by rocks and reefs extending SW from the island, and its use is not recommended except by boats with local knowledge. A 2¾-fathom shoal is 0.7 mile SW of Jute Island. Indifferent anchorage, sheltered except from SE winds, can be obtained N of Jute Island in Island Bay.

(81) As in all of the bays in this vicinity, the williwaws are violent with W winds and are very troublesome, if not dangerous, to small craft.

(82) **Portage Bay,** between Cape Kanatak and Cape Igvak, is clear except for reefs and rocks about 1 mile from its head. The bay is open to SE winds and is subject to NW winds, which draw down from the mountains with great force.

(83) A kelp-covered reef extends 0.5 mile SW from **Kelp Point.** Just off the reef and separated from it by a narrow channel is a rock, covered ¾ fathom, leaving a clear channel 0.2 mile wide W of it for entering the inner part of the bay.

(84) The best anchorage is in depths of about 5 to 10 fathoms SE of the ¾-fathom rock; coasting vessels sometimes use the inner anchorage NW of the rock. The anchorages are subjected to violent williwaws with W weather, and at such times the inner anchorage should not be used. The wind is apt to shift from NW to SE with little warning. In such cases, launches make for Kanatak Lagoon for shelter.

(85) Vessels with passengers or freight usually anchor as far in as their draft permits. With NW winds there is but little swell.

(86) **Kanatak Lagoon,** on the W side of the bay about 3.5 miles from the head, has a narrow entrance with less than 4 feet at low water, but has depths of 4 to 15 fathoms, mud bottom, inside. It affords excellent anchorage in E weather, but is a maelstrom with NW winds. Under such conditions the williwaws blow with almost hurricane force, and the water level at the E end is higher than that at the W end.

(87) In approaching Portage Bay from Shelikof Strait, keep a careful track of the reckoning, as the various headlands are similar and the bay is difficult to recognize from a distance. Enter on a midchannel course and, if bound to the inner anchorage, pass 200 yards SW of the ¾-fathom rock, then head N and anchor as desired.

(88) **Cape Igvak** (57°26.1'N., 156°01.3'W.), a conspicuous headland separating Portage and Wide Bays, is the S extremity of a ridge of mountains rising 2,000 to 2,600 feet, and covered with clouds most of the time.

(89) **Wide Bay,** between Cape Igvak and Cape Kayakliut, is obstructed across the entrance by many islands which are surrounded by foul ground.

(90) In August 1983, a 3-fathom shoal was reported about 5.5 miles E of the islands in about 57°20'37"N., 156°06'54"W. The preferred entrance to the inner bay for deep-draft vessels is through a 300-yard-wide channel between **East Channel Island** and **Channel Rock;** the channel has a least depth of 9 fathoms. Rocks and reefs, marked by kelp and usually breakers, extend almost 1.5 miles SE and 0.3 mile N of Channel Rock. Foul ground extends almost 2 miles NE and 0.2 mile S of East Channel Island. Small shallow-draft vessels may enter the inner bay between **Terrace Island** and **West Channel Island** or between **Hartman Island** and the unnamed islet 0.4 mile SW. Ledges and shoals

surround the islands, and in the channel between Terrace and West Channel Islands a distance of 175 yards should be maintained off the SW side of West Channel Island; a midchannel course should be maintained in the channel between Hartman Island and the unnamed islet. Passage elsewhere should not be attempted without local knowledge. Moderate rip currents have been observed in all the entrances to Wide Bay during maximum currents. Once inside the inner bay, secure anchorage in any weather is available in 5 fathoms to more than 20 fathoms, excellent holding ground. The williwaws are disagreeable with W winds but are not dangerous to moderate-sized vessels. Small craft can anchor in the lee of the islands.

(91) The ruins of an abandoned pier, causeway, and oil drilling platform are about midway on the W side of Wide Bay. In 1971, it was reported that only about a 150-yard inshore section of the pier remained. The abandoned oil drilling platform, about 0.3 mile offshore, was reported to be about 3 feet in diameter and to stand about 15 feet above the water. Mariners are advised to navigate with caution in this area.

(92) **Local magnetic disturbance.**–Differences of as much as 14° from the normal variation have been observed on Terrace Island and as much as 3° on East Channel Island.

(93) **Chart 16568.**–Small-craft inshore route between Wide Bay and Sutwik Island has many dangers; mariners are advised to used caution when navigating this area.

(94) **Cape Kayakliut** (57°17.7'N., 156°18.9'W.), on the S side of Wide Bay, has a generally flat appearance, sloping smoothly back to the mountains. The shoreline is formed by low, steep cliffs and close to the point is a prominent grass-topped island.

(95) **Imuya Bay** is 4 miles S of Cape Kayakliut. A group of islands is in the NW corner and a shoal area with a least depth of ½ fathom extends about 2.8 miles ENE from the S point of the entrance. Depths shoal gradually from 17 fathoms inshore from a line between the N and S points to 5 fathoms at a point 0.4 mile from the center of the sand and gravel beach which heads the bay. The area close-to and between the islands is shoal and foul, and the area between the largest island and the mainland to the N and W is mostly bare at lower low water. A large stream enters the bay at the W end of the sand and boulder beach at the head.

(96) The wreck of a large vessel is against the shore W of the islands at the S point of the bay.

(97) To enter Imuya Bay from the N, follow the trend of the shoreline from the N point around the islands, keeping the islands at least 0.4 mile on the starboard hand, and thence midway between the islands and the S shore to the head of the bay. Indifferent anchorage can be had for small craft in 5 fathoms, hard, fine sand bottom, 0.4 mile from the beach at the head of the bay.

(98) In entering the bay from the S, care should be taken to avoid the shoal area extending about 2.8 miles ENE from the S point of the bay.

(99) **Kilokak Rocks,** two rocky islets, are about 2 miles offshore and just SE of Imuya Bay; the 30-foot NW rock is the higher. The area W of these rocks is clear for 1 mile toward the shore. Depths of 15 fathoms or more can be carried to within 100 yards of the N, W, and S sides of the higher rock. A shoal area extends 0.1 mile SE of the smaller islet.

(100) A rock, that uncovers about 6 feet, is 1.3 miles NW of Kilokak Rocks. This rock marks the SE end of a foul area that extends inshore to a group of reefs and islets near the shoreline.

(101) **Agripina Bay,** 12.5 miles SE of Cape Kayaklut, is a deep indentation with a generally low but bold rocky shoreline indented with numerous small bights and clefts. The N and S points forming the entrance are marked by groups of small steep rocky islands; a larger group of very prominent islands and rocks, near the S central part of the bay, roughly divides the outer and inner parts of the bay. A large shoal area, with a least depth of 3 fathoms, is about 0.5 mile N of the E end of the largest island.

(102) Anchorage for large vessels can be had in 16 to 18 fathoms in the W end of the outer bay about 0.3 mile N of the islands and 0.3 mile from the W shore. This area is protected from all but NE to SE weather. One of the best small-boat anchorages along this section of the coast is in the bight at the head of the inner bay, midway between the E and W shores, in 5 to 11 fathoms, sticky, mud bottom. No swell makes into the bight even in heavy weather, and there are no williwaws even in strong winds. NW of the bold rocky hill which forms the W side of the bight, is an extensive gravel flat bare at low water except for the shallow delta channels of a large stream that enters the bay at this point.

(103) The only danger in the inner bay is a reef near the W side. The outermost part of this reef is about 350 yards off the W shore and about 400 yards S of the anchorage. The area between this reef and the prominent point about 800 yards S of the anchorage has several submerged rocks.

(104) The coastline from Agripina Bay to Port Wrangell is very broken, with many indentations and small inshore islands. The area is rocky and foul within 400 yards of the beach. Outside the small islands, some pinnacle rocks exist. Kelp extends 500 yards SE from the point 0.5 mile SSW of Agripina Bay.

(105) Offshore are numerous rocks and islands.

(106) **Ashiiak Island** is high and rocky with a rounded central dome. The W side has sheer cliffs to the waterline and the water is deep close inshore. The E side of the island appears foul, with small islets extending 0.3 mile offshore and with one submerged rock, that breaks in heavy weather, about 0.7 mile offshore. A small rocky islet about 10 feet high is 400 yards W of the island. A rock, that uncovers about 8 feet, is 0.9 mile SW of Ashiiak Island. Another rock, that uncovers, is about 150 yards to the E. In a moderate swell these rocks break at high water.

(107) **Port Wrangell,** 7 miles SW of Agripina Bay, is a deep, narrow indentation in the coastline. The outer bay, open to the SE and E, has depths in midchannel ranging from 130 fathoms at the entrance to 14 fathoms at the inner end. The shoreline is steep and rocky.

(108) The inner bay has depths from 10 fathoms near the entrance to 5 fathoms at the head. The shoreline rises steeply all around the bay and there are often williwaws on strong NW winds. The ground swell does not make into the inner bay.

(109) About 500 yards inside the inner bay on the E shore is a small stream, dry during extremely dry weather, where small craft can come close alongshore and take water aboard with 200 feet of hose at about 30-foot head.

(110) E of Port Wrangell is a group of three large islands. **David Island,** the most N and largest of the group, is high and bold with steep rocky sides marked by numerous caves and clefts. Two small, rocky islets are close inshore on the N side.

(111) **Lone Rock,** 1 mile NE of David Island, is about 100 feet high, of a distinct brick red color, and with vertical or slightly overhanging cliffs on the W end that rise to a flat grassy top.

(112) **Poltava Island,** 0.8 mile SE of David Island, has the same general appearance as David Island but is smaller and lower. The

passage between David and Poltava Islands is not recommended without local knowledge. In December 1987, a 5-fathom spot was reported about midway between David and Poltava Islands in about 57°01'52"N., 156°28'52"W.

(113) **Navy Island,** the most S and smallest of the group, is 0.4 mile SE of Poltava Island. Several detached rocks or islets extend 600 yards W from the main island. The passage between Poltava and Navy Islands is not recommended without local knowledge. Thick kelp and foul ground are between Navy Island and a low rock 400 yards to the NE.

(114) **Cape Providence,** 3 miles S of Port Wrangell, is fairly low with a steep rocky shoreline and many small indentations. A group of five rocky islets extends SE about 0.6 mile from the tip of the cape. Submerged rocks extend about 0.6 mile N and NE of the islets.

(115) **Chiginagak Bay,** between Cape Providence and Cape Kuyuyukak, is 6 miles long, 10 miles wide between the capes, and 2 miles wide at the inner end. The outer bay has scattered groups of rocks and small islands, and a group of four larger islands is along the W shore. In 1989, numerous uncharted shoals, covered rocks, and foul areas were reported to exist throughout the northern and eastern parts of Chiginagak Bay.

(116) Offshore from the bay and 5 miles S from Cape Providence is a prominent group of islets known as the **Aiugnak Columns.** The highest islet rises to about 102 feet. The areas immediately surrounding the columns are extremely complex, particularly the area NE of the highest islet. Vessels should give them a wide berth. A surface current of about 2 knots often sets to the NE in the vicinity of the columns.

(117) **Devils Finger** (56°52'10"N., 156°37'27"W.), about 2.5 miles SW of Aiugnak Columns, is a narrow rock pinnacle covered 1 fathom rising abruptly from general depths of 20 fathoms.

(118) A group of four major islands and numerous islets, about 3 miles NW of Aiugnak Columns, cover an area approximately 1 mile by 0.5 mile. The islands are about 50 feet high, generally flat, and covered with grass. Ledges and foul area extending as much as 0.3 mile offshore surround the Islands.

(119) An extensive foul area surrounding several islets is about 4 miles NNW of Aiugnak Columns. An isolated rock that uncovers about 7 feet is 0.7 mile NW of the center of this foul area.

(120) The inner part of Chiginagak Bay, about 2 miles square, is separated from the outer part by **Derickson Island,** 1.2 miles long and 0.3 mile wide, between a bold headland on the E and a low rocky point on the W. A smaller island is 1.1 miles due N from the 300-foot peak of Derickson Island. Large vessels enter the inner bay from Cape Providence, passing E of Derickson Island.

(121) In November 1988, a rock covered 1¼ fathoms was reported 1.2 miles SSW of the S end of Derickson Island.

(122) At the head of the bay is a flat sand and gravel beach that bares 200 to 400 yards offshore at low water. A large unnavigable stream enters the head of the bay on the W side over a broad sand delta, bare at low water. Two smaller streams enter the NE corner W of a prominent rocky headland distinguished by several small caves at the high-water line. A ledge showing considerable area at low water is just E of the delta. Several pinnacles on this ledge bare at high water.

(123) Anchorage for vessels of any size can be had in the inner bay. In moderate weather from any direction, or in heavy weather from the W, N, or E, the best anchorage is 0.2 to 0.5 mile SW of the rocky point E of the beach at the head of the bay. Depths are 8 to 11 fathoms, sand or mud bottom, good holding ground. Williwaws have been experienced in the bay on N winds. They generally blow out of the valley leading NW to **Mount Chiginagak**. In S weather, better shelter can be found 500 yards N of Derickson Island in 13 fathoms. In moderate S weather very little swell makes into the anchorages.

(124) **Cape Kuyuyukak** (56°54.0'N., 156°50.0'W.), between Chiginagak Bay and Nakalilok Bay, is bold and prominent with high grassy hills sloping steeply to sheer cliffs at the beach. Numerous rocks and islets are close inshore S of the cape, and a chain of reefs extends 2 miles E from the cape. S of the reef, a shoal area extends for 1.3 miles with numerous kelp patches.

(125) **Radial Island**, about 5 miles SSE of Cape Kuyuyukak, is a bare rock about 100 feet long, 50 feet wide, and 60 feet high. There are indications of shoal areas about 1 mile NW of the island.

(126) **Ugaiushak Island,** 6 miles S of Cape Kuyuyukak, is really a double island with a narrow, low boulder ridge connecting the two parts. The W part of the island is high, with a broken skyline and very tall, steep cliffs on the W and N sides. The E half is much lower, flat on top, with sheer cliffs to the shoreline on the N and W, and a gradual slope to a low and rugged shoreline on the E. A group of buildings is at the W end of the ridge.

(127) A narrow chain of reefs about 0.5 mile long is 1.4 miles S of Ugaiushak Island. The SE reef is marked by two pointed rocks about 60 feet high and the NW reef by a single point about 25 feet high.

(128) **Central Island,** midway between Ugaiushak Island and Nakalilok Bay, is a small but very prominent island with a single high peak shaped like a conical beehive. A small rocky islet is 200 yards S of the larger island.

(129) The southernmost of a second group of islands is 4 miles due W from Ugaiushak Island. On the N are 3 small rocky islets; in the center is an island 1.1 miles long and 0.2 mile wide, with grassy top and steep rocky shoreline; on the S is a large, high island, 0.6 mile long and 0.1 mile wide, with very high vertical cliffs to the waterline. Depths obtained around these islands were 15 to 18 fathoms, very smooth sand bottom, but the formation of the islands suggests hidden dangers. Shoaling to 4½ fathoms exists on the SW side of the northernmost islands.

(130) Five miles ESE of Cape Kunmik is **Hydra Island,** large and flat-topped, 0.5 mile long and 0.2 mile wide, and with a small, rocky islet 300 yards to the N. A shoal area 2 to 3 miles to the S of Hydra Island has a least depth of 5¼ fathoms. Shoaling occurs about 0.5 mile E of the island with a least depth of 5½ fathoms. Shoaling also occurs about 4 mile SW of Hydra Island with depths of 5¾ fathoms.

(131) **Nakalilok Bay** is divided into an E and W part by a low double-headed cape. The E part is 4 miles long, 3 miles wide at the entrance, and 1.5 miles wide at the head that terminates in a low sandy beach. The bay is generally deep except for a small shoal area marked by kelp, 1.5 miles E of the double-headed cape, and for a shoal area that extends 0.4 mile E from the same cape. The W shore is a boulder and ledge beach backed by steep cliffs. The E shore is boulder strewn near the entrance, with gravel toward the head, and is backed by very steep hills. A very prominent waterfall is 2 miles from the head of the bay on the E side. This section of the bay affords good shelter for small craft except in heavy S weather. The anchorage is in 7 to 9 fathoms, sand bottom, 600 yards offshore from the E end of the sand beach

at the head of the bay. Large craft can anchor in 10 to 15 fathoms about 0.5 mile offshore.

(132) The W part of Nakalilok Bay has a long stretch of sand beach, shaped like a flat crescent, that is between the double-headed cape and the N point of Yantarni Bay. Very smooth and flat, the beach is backed by low grassy dunes on the W half. The bottom off this beach is of fine sand and is unusually smooth and flat, with no indications of submerged reefs. Depths vary from 5 fathoms 0.4 mile offshore, to 18 fathoms 1.6 miles offshore.

(133) **Yantarni Bay,** on the E side of Cape Kunmik, is about 2.5 miles wide at the entrance and 4 miles long. The E side of the bay is a low cape with a very flat top and vertical cliffs of an unusual red-yellow color dropping sheer to the high-water line. A narrow reef extends 400 yards S. The head of the bay has depths of less than 1 fathom, and is not recommended for anchorage.

(134) **Cape Kunmik** (56°46.5'N., 157°10.0'W.), high and bold, is one of the most prominent capes along this section of the coast. A prominent waterfall, 40 feet high, is on the S end of the cape. The highlands are rounding in contour, covered with grass and alder patches on the lower slopes and prominently marked by deep gullies. The shoreline is formed by vertical cliffs 20 to 400 feet high and deeply indented with small bights and clefts. The beach is generally foul and boulder strewn, with submerged rocks, reefs and small rock islets extending 200 to 900 yards offshore. There are no known dangers farther offshore other than the visible islets.

(135) The southernmost tip of the cape is a small semidetached rocky island with very steep sides terminating in a wedge-shaped rock about 70 feet high. About 600 yards NE of this point and close inshore is a detached islet of very striking appearance. As viewed from the S and E, it resembles a cathedral, with a single central spire about 200 feet high on the S face, and a lower rounding dome on the N. In sunlight this formation stands out prominently against the black cliffs behind.

(136) Six hundred yards off the SE side of the cape is a small islet, 70 feet high, with vertical black rock sides and a smooth turtleback top of grass. A low reef is 200 yards SE, and submerged rock is 500 yards E of the islet. The area between the islet and the cape is foul and thick with kelp. A submerged rock, covered 1 foot, is about 3.8 miles S of the cape in about 56°42.6'N., 157°08.5'W.

(137) **Amber Bay,** large and open, is just W of Cape Kunmik. The outer part of the bay has moderate depths and regular bottom except for ledges and reefs alongshore, and the inner half is shallow, with numerous reefs and kelp patches. Being exposed, the bay is not recommended for anchorage, but emergency anchorage for small craft can be obtained in 3½ to 6 fathoms, sand and shell bottom, under the NE shore just NW of a long reef awash at high water. The reef is 3.2 miles NW of the prominent beak-shaped cliff that marks the S tip of Cape Kunmik. The bight inshore from the reef is foul with rocks, bare at various stages of the tide. There is a reef that uncovers 1½ fathoms on the NW shore in about 56°49.7'N., 157°26.9'W.

(138) **Eagle Island** and **Garden Island,** separating the entrances to Amber and Aniakchak Bays, are grass-covered, table-topped formations, with sheer cliffs on all sides. Eagle Island is nearly round and Garden Island is crescent-shaped. A large breaker is just SE of the line between Eagle and Garden Islands. From the N point of Garden Island is a sand and gravel spit extending toward **Cape Ayutka,** which divides Amber and Aniakchak Bays. S and W of the cape is an extensive foul area marked by kelp. The passage between Garden Island and Cape Ayutka should be avoided until it has been surveyed. At the S end of Garden Island are two prominent pinnacles, the outermost is needle shaped. Good anchorage for small craft can be obtained close under the shore on the W side of Garden Island in 7 to 10 fathoms, sandy bottom. Shoaling to 7½ fathoms exists 4 miles SE of Garden Island in about 56°42.2'N., 157°12.4'W. Shoaling to 1½ fathoms exists between Garden Island and Cape Ayutka in about 56°44.9'N., 157°24.0'W.

(139) **Aniakchak Bay,** wide and open, is entered between Garden Island on the N and Kumlik Island on the S. Reconnaissance examination indicated moderate and regular depths to the steep sand and gravel beach at its head. Along its N shore, for about 1.5 miles W of Cape Ayutka, foul area marked by kelp, extends 200 to 800 yards offshore. Two rocks awash are SW of Cape Ayutka, 0.8 and 1.7 miles, respectively. In the NW corner of the bay is a small island, 82 feet high, with vertical cliffs along its E side. Immediately NW of this island, in the restricted area between the island and the mouth of a river, cannery tenders and barges moor to piling in favorable weather, but a SE swell piles up in this anchorage.

(140) Along the S side of the entrance to the bay (see chart 16566) and about 1.2 miles NNW of Kumlik Island is a prominent flat-topped pinnacle rock, 85 feet high. SE of this rock 0.4 mile is a breaker marked by kelp, and about 400 yards off the N point of Kumlik Island are two small rocks, close together, 3 feet high. Between the breaker and the small rocks is a deep channel. SW of the pinnacle rock about 0.4 mile, is another breaker, marked by kelp; and W of the pinnacle about 0.4 mile is a 3-fathom spot marked by kelp. A prominent headland, locally known as **Elephant Head Point,** is 1.3 miles NW of the pinnacle. Rock ledges extend N and E about 400 yards from Elephant Head Point. Leading to Aniakchak Bay from the S is a channel between Kumlik Island on the E and Cape Kumlik on the W, thence between the prominent pinnacle rock on the E and Elephant Head Point on the W. This channel is used by cannery tenders operating out of Chignik, but is not recommended for general use without local knowledge.

(141) About 1.2 miles NW of Elephant Head Point is a low, rock-cliff point with a rock awash at high water about 300 yards to NE. In the slight bight just W of Elephant Head Point temporary anchorage can be obtained in 8 fathoms.

(142) Vessels can select anchorage in 12 to 20 fathoms in the SW, W, or NW parts of the bay about 0.6 to 1.5 miles from the sand and gravel beach. The bay is protected from the SW through W to N. E and SE swells pile up heavily in this bay.

(143) **Sutwik Island,** about 7 miles off the Alaska Peninsula and about 90 miles SW from Kodiak Island, is 12 miles long and 4 miles wide. The S side of the island, low and marshy in places, is very foul for 1 mile from the beach. The N side has steep shores and is foul along an 8-mile stretch of shore W from Foggy Cape. This stretch should be given a berth of not less than 1 mile in passing. The bottom is generally foul along this stretch.

(144) There are several deep-water channels between the NW side of Sutwik Island and Cape Kumlik. Vessels can navigate parallel to the W side of Sutwik Island about 1 mile offshore in a NE or SW direction. Reported currents up to 3 knots flow along the axis of this channel and can create dangerous wave conditions when the wind is opposing the current. A wider channel is found about 4 miles off the W side of Sutwik Island, but care should be

taken to avoid the dangerous rocks about 4.5 miles NW of the NW tip of Sutwik Island.

(145) An excellent anchorage for small and medium-sized vessels, protected from SW to SSE weather, exists in the small bay 0.5 mile E of the NW tip of Sutwik Island, about 9 miles W of Foggy Cape.

(146) Three small-vessel anchorages exist along the W shore of Sutwik Island that provide good protection from NE to S weather. These are all in small coves centered in about 56°34.8'N., 157°15.7'W.; 56°34.5'N., 157°16.4'W.; and 56°32.4'N., 157°19.7'W., respectively.

(147) Small to medium-sized vessels can find protection from NW to NE weather on the S side of Sutwik Island in about 56°32.8'N., 157°04.4'W., about 3.3 miles W of Foggy Cape.

(148) **Foggy Cape,** the E end of Sutwik Island, is a prominent landmark for vessels passing along the coast. It rises to 418 feet, and is first raised as a detached island because of a low neck of land that separates it from the rest of Sutwik Island. Preliminary data from surveys in 1994 indicates a ¾-fathom depth 1 mile SW of the Cape, and 5¾ fathoms 1½ miles SSE of the Cape. Mariners are advised to give it a wide berth. Foggy Cape and the S side of Sutwik Island are often covered with fog when the N side is clear. Blankets of fog have been observed when the entire outline of the island was indicated without any part of it being actually visible.

(149) The current velocity is about 1.5 knots off Foggy Cape.

(150) **Chart 16013.**–The **Semidi Islands** are about 90 miles SW of Kodiak Island, and about 23 miles SE of Foggy Cape.

(151) **Aghiyuk Island,** the N of the group, is long and narrow and rises vertically from the shoreline in high rocky cliffs, that are practically unscalable, especially along the W side of the island. In the S center of the island is a grassy plateau, with a prominent rockpile, the highest point on the island, rising to over 1,000 feet.

(152) On the E side of the island is a fair-sized bight, with a sandy beach that is clear except near its N end, where kelp-marked rocks extend offshore. E of the bight, about 1 mile offshore, is small sheer-sided **Aghik Island,** 528 feet high. Scattered ledges and rocks extend about 500 yards off the SE point of Aghik Island.

(153) Anchorage can be had 400 to 600 yards off the bight in 10 to 15 fathoms, sand bottom. It can be safely approached from the NE, passing Aghik Island about 600 yards off; or from the SE on a midchannel course between Aghik Island and Aghiyuk Island.

(154) A small group of rocks is 500 yards W of the SW point of Aghiyuk Island. The highest has an elevation of 20 feet.

(155) **Chowiet Island,** the S large island, is triangular in shape, and has sheer cliffs alongshore, especially on its W side. It reaches a height of 810 feet near its W side, slightly N of its center. The island has alder- and grass-covered ridges with many bedrock outcrops and cairn-shaped rockpiles. Some of the latter are very large, and in various odd forms.

(156) At the S end of Chowiet Island is a small bay formed by a chain of low rocks and two steep-sided islets extending SE; **Aliksemit Island** is the largest. The S shore of Chowiet Island is a Steller sea lion rookery site. There is a 3 mile vessel exclusionary buffer zone around this rookery which encompasses most of the island and islets off shore. (See **50 CFR 223.202,** chapter 2, for limits and regulations.) In emergency situations anchorage, with about 200 yards swinging radius, can be had in the N center of the bay in 20 fathoms, sand bottom. This bay is protected from SW through W to NW.

(157) A double bay is on the NW side of Chowiet Island which also offers emergency anchorage in the center of the E arm in 10 fathoms, sand bottom. This anchorage is most favorable for winds from the NE and around through E to SE, but a SW swell creates considerable surge. Additional and emergency anchorage can be had in the center of the W arm in 22 fathoms, sand bottom, and provides about 250 yards swinging radius and is favorable for winds out of the E and around through S to SW. This anchorage is less subject to surge with a SW swell than in the E arm.

(158) **Kateekuk Island,** 0.6 mile NW of Chowiet Island, is 0.8 mile long, 0.4 mile wide, and 509 feet high. Between this island and Chowiet Island to the S, and Aghiyuk Island to the N, are strong tidal currents, that cause very bad tide rips.

(159) **Anowik Island,** 591 feet high, and **Kiliktagit Island,** 404 feet high, are about 1.2 miles NE of the N end of Chowiet Island. Between these islands and Chowiet Island are strong currents that cause moderate tide rips; a heavy SE swell piles up excessively.

(160) **Suklik Island,** 345 feet high, is about 0.9 mile S of Kiliktagik Island and about 1.2 miles E of Chowiet Island. A low flat rock is about 150 yards off the NW end of the island, and numerous sheer pinnacles extend S about 0.5 mile.

(161) **South Island,** 2 miles SW of Chowiet Island, is a huge bare rock, 260 feet high, with vertical sides. Several high, sheer rock pinnacles are just W of it. The breaker charted about 5.5 miles WSW of Chowiet Island is reported to be much closer to the island.

(162) A few reconnaissance sounding lines indicate deep water adjacent to the islands and clear channels between them. Strong tidal currents and bad tide rips are found among the Semidi Islands, especially in the channels, between Aghiyuk and Kateekuk; and between the latter island and Chowiet.

(163) **Chart 16013.–Lighthouse Rocks** (55°47'N., 157°25'W.) are spread over an area 0.2 mile in diameter that is 27 miles SW of Chowiet Island and 57 miles W of Chirikof Island; the largest rock is 500 feet long and 90 feet high. Deep water surrounds these barren rocks and they can be safely approached to within 0.5 mile; there are large sea lion rookeries on the rocks. A S set is generally experienced between Lighthouse Rocks and Chirikof Island. A rock awash (reported) is charted 11 miles SE from Lighthouse Rocks.

(164) **Chart 16566.–Cape Kumlik** (56°38.0'N., 157°27.0'W.), the promontory on the Alaska Peninsula nearest to Sutwik Island, is foul with ledges and reefs along its S shore. Near the E end of the S shore and extending 0.5 to 1 mile S is a group of rocks and islets. The S islet, narrow and about 400 yards long, is 81 feet high; it is a valuable landmark for the approach to the channel between Cape Kumlik and Kumlik Island. From the SW point of Cape Kumlik, ledges and reefs, that break in a heavy swell, extend 2.8 miles SW and obstruct the NE side of the entrance to Kujulik Bay.

(165) **Kumlik Island,** 0.8 mile off the E end of Cape Kumlik, is 1,053 feet high. The shores are steep and rocky; reefs border its N, E, and S sides. About 3 miles E of the island (see chart 16013) is a lone high water rock. Midway between Kumlik and Sutwik Islands is a rock that bares at half tide, and about 1 mile to the E, are three rocks that bare 3 feet at high water. From the SE end of

Kumlik Island on a bearing of 204°, and at distances of 2 and 3 miles, respectively, are a rock awash at low water and a rock 55 feet high. The latter is particularly valuable as a landmark for the passage E of Kumlik Island.

(166) **Kujulik Bay,** entered about 14 miles W of Sutwik Island, is a large open bay that affords good shelter in NW winds. Reefs and rocks fringe the shores of the bay and the entrance is flanked by reefs on each side. The W arm of the bay is shoal for 8 miles from the head. A dangerous 2¾-fathom shoal is near the middle of the bay in 56°36'11.3"N., 157°46'24.7"W. Shoals, rocks, and broken ground are scattered throughout the bay; caution is advised. The best protection from NW winds is in the N part of the bay.

(167) **Unavikshak Island,** off the entrance to Kujulik Bay, rises to 465 feet near its N side, and is used as a fox ranch. Numerous rocks and reefs fringe the shores. Two rocks, 25 feet high, are 1.5 miles S of the island. The W rock is conspicuously flat-topped. A smaller island, 153 feet high, is off the NE point of the island. Anchorage can be had on the NW side of the island in 15 fathoms, hard rocky bottom.

(168) **Cape Kumliun,** S of Kujulik Bay, is a broad bold headland rising to a 1,671-foot peak near the SE part of the cape. This peak is the most conspicuous object in the vicinity, but is often covered by clouds. The cape is foul with reefs and rocks extending 1 mile offshore at its E point. Some of these dangers do not break even at low water and may not be marked by kelp.

(169) **Chignik Bay,** about 50 miles W of the Semidi Islands, can be entered from either N or S of Nakchamik Island. The S part of the bay is irregular but deep. Important salmon fisheries are in Chignik Bay.

(170) **Nakchamik Island** is an irregular-shaped island in midentrance to Chignik Bay. The conical peak, 1,450 feet high, in the S central part of the island is a distinctive landmark and prominent from all directions except through an arc of about 90° around the S part of the island, where other mountains obscure it.

(171) The bight on the E side can be used as an anchorage. Enter the middle of the bight and anchor in 12 fathoms, sand bottom. The N end of the island is steep-to, and no anchorage is afforded. The W point is fringed with reefs extending about 300 yards offshore. There are no off-lying dangers.

(172) **Kak Island,** 1.3 miles S of Nakchamik Island, is 400 feet high, bold, and generally reddish or grayish in color, with grassy patches on the gentler slopes. The S bluffs are of marked columnar structure. The island has deep water on all sides and can be approached close-to.

(173) **Atkulik Island,** 3 miles SE of Nakchamik Island, is about 0.8 mile long and 0.6 mile wide, and 725 feet high with precipitous shores on its S side. It has no anchorages. Two detached rocks, one about 25 feet high and the other about 35 feet high, are at the NE and SE ends, respectively, of Atkulik Island. A small rock awash is close off the W side.

(174) **Castle Cape,** on the S side of the entrance to Chignik Bay, is narrow and precipitous; stratification is a conspicuous feature of many shades of light-colored rocks varied by bands of black. The cape has been worn into many curious castellated pinnacles and buttresses, hence its name.

(175) A pair of towering eminences near the end of Castle Cape reach 1,200 feet and form a most distinctive feature. Between the towers are needle peaks of lesser elevation.

(176) **Castle Bay** is deep, with mud or clay bottom, and presents no known outlying dangers. Small boats can anchor along the S shore of the bay about 4 miles W from Castle Cape, where the bottom and shore slope gradually to a sand and gravel beach. The remaining shore rises almost vertically from the water. Grass and some scattering alders are the only vegetation.

(177) **Anchorage Bay** is W of the fourth ridge from Castle Bay, the ridges forming a succession of headlands on the S shore of Chignik Bay. This ridge terminates in vertical bluffs about 200 feet high, and rises to a rounded hill, 1,050 feet high, that is covered with grass and alders. The ridge W of Anchorage Bay is irregular in form, with bluffs at the water. Off the W point are **Eagle Rock,** a large grass-covered rock, 100 feet high, connected with the shore at low water, and a lower rock, 30 feet high, 100 yards farther out. A shingle spit extends SW from the E shore.

(178) **Chignik Spit Light** (56°18.6'N., 158°23.0'W.), 35 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the end of the spit.

(179) Anchorage Bay can be easily recognized by the lights of the settlement. In entering, give the spit a fair berth. In thick weather care should be taken to avoid entering Mud Bay by mistake. By following the S shore of Chignik Bay little difficulty should be experienced.

(180) Anchorage is good throughout most of Anchorage Bay, but dragging can be expected during the heavy winds and williwaws prevalent here. If the anchor is on the bottom long some difficulty may be experienced in weighing. Care should be used in anchoring at high tide, for the flats make out for a distance and drop off sharply. An anchorage for small craft is on the E side of the bay near the sandspit, with soft mud bottom. Larger vessels may find good anchorage just outside the bay, about 2 miles NE of Eagle Rock in about 56°21'30"N. 158°21'45"W.

(181) **Chignik** is a fishing settlement at the head of Anchorage Bay. In 1997, the Aleutian Dragon Fisheries had a two fingered pier about 0.2 mile W of the village. The pier has a 200-foot face with depths of 33 feet alongside. An opening in the center of the pier has a 35-ton travel lift. Chignik Pride Seafood Company, 0.7 mile W of the village, maintains a pier with a 160-foot face with depths of 33 feet alongside. Both piers have dolphins about 50 feet from the ends along the face to support larger vessels.

(182) Peter Pan Seafoods Company has a wharf about 0.2 mile W of the village. The wharf has a 63-foot face with a reported depth of 26 feet alongside. An opening in the center of the wharf has a lift for small craft. The cannery of the Alaska Packers Association, 0.7 mile W of the village, has two wharves. The W one has a 62-foot face with depths of 18 feet alongside, while the E wharf, about 90 feet distant, has a 50-foot face with depths of 21 feet alongside. Vessels of over 16-foot draft should approach the wharf bow-on and maneuver alongside. On both sides of the wharves is a line of dolphins. There are depths of 8 fathoms 50 feet off the dolphins.

(183) Radiotelephone and radiotelegraph communications are maintained.

(184) **Pilotage, Chignik**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(185) The Alaska Peninsula is served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(186) Vessels using Southwest Alaska Pilots Association pilots and en route to Chignik can meet the pilot boat about 1 mile N of Chignik Spit Light (56°18.6'N., 158°23.0'W.).

(187) The pilot boat can be contacted by calling "CHIGNIK PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(188) **Mud Bay,** shallow and of no commercial importance, is filled with eel grass that interferes with the operation of launches. The only anchorage is in the entrance.

(189) **Negro Head,** between Mud Bay and Chignik Lagoon, is a high, round-topped vertical bluff.

(190) **Chignik Lagoon,** at the SW end of Chignik Bay, is shallow but a channel with depths of 7 to 42 feet follows off the E shore to an inactive cannery at **Chignik Lagoon,** 2.3 miles above the entrance sandspit.

(191) The best anchorage is off the E shore near the small boat mooring dolphins, which go dry at almost all stages of the tide. The majority of local fisherman anchor just off the edges of the main channels, or on the E shore mudflats and let their vessels go high and dry. Beyond the dolphins which are dry at low water, the lagoon shoals and only launches use the channels to the head. Chignik Lagoon has an important run of red salmon. Vessels of 10-foot draft should not enter the lagoon. Vessels of 6-foot draft should navigate with extreme caution. Eel grass is thick on all mudflats and along the entire shoreline. The mudflat NE of Chignik Island is strewn with many rocks which bare at low water. Local knowledge is highly recommended when navigating any part of the lagoon. A frequently used portage connects Chignik Lagoon to the head of Kaiukta Bay.

(192) A reef, 3 miles 040° from Negro Head, is covered 4½ fathoms and breaks in heavy weather. This is the only outlying danger in Chignik Bay found during the survey of 1924.

(193) **Anguvik Island,** about 8 miles NNE of Anchorage Bay, is bordered by a reef extending about 1 mile to the E and 0.3 mile to the W, that breaks at all stages of the tide. The island is flat topped, 50 feet high, covered with grass, and has precipitous sides. The coast NE of the island is foul for about 0.6 mile offshore, and should be avoided.

(194) **Hook Bay,** W of Cape Kumliun, is deep, except near the head where the slope of the beach is very gradual, with the 10-fathom curve 0.3 mile off the high water mark. The area behind the spit is shoal. Fair anchorage may be obtained for small craft just W of the outer end of the spit in 3 fathoms. Large vessels can find no protection from SE weather. If anchoring near the head of the bay, avoid dragging onto the shoals that rise abruptly.

(195) **Weasel Mountain,** 2,410 feet high, is 1 mile S of Hook Bay and is the most prominent mountain in this vicinity.

(196) A group of bare rocks is about 1 mile S of the S coast of Cape Kumliun; the highest is 39 feet. They are connected by reefs, but otherwise are apparently steep-to. The rocks are grass covered and there is but little kelp bordering them. Between the rocks and the cape to the N is a clear passage but it is of no importance and is rarely used.

(197) **Katmai Reef,** 3.3 miles 009° from the N point of Nakchamik Island, is narrow and about 600 yards long in a NE-SW direction. A small rock on the reef bares at extreme low tide. There are usually breakers, even with a smooth sea, but the breaks may occur at long intervals. A light growth of kelp is on the reef. There is deep water between this reef and the detached rocks about 3 miles to the NE, in the direction of Unavikshak Island, but the passage is not recommended.

(198) To enter Chignik Bay from the N, stay at least 8 miles SE of Foggy Cape (see chart 16013) to avoid the position of the reported rock S of the cape, then change course to pass 1 mile N of Nakchamik Island and enter Anchorage Bay in midchannel. From the S, stay 1 mile outside Castle Cape and the shore to Anchorage Bay.

(199) **Chart 16013.**–The Alaska Peninsula coast from Castle Cape to Mitrofania Bay is characterized by steep rock-cliff shoreline, high jagged ridges, sharp peaks, steep slopes of bare rock, alder brush or grass, and numerous rockslides. It has many waterfalls, striking cliffs of contrasting colors, and intermittent stretches of boulder and shale beach, the latter resulting from broken cliffs and large rockslides. Close alongshore are numerous pinnacle rocks, most frequently off capes and points.

(200) The water is generally very deep in all of the bays and arms throughout this area. No known dangers are more than 500 yards offshore.

(201) **Not all of this area has been surveyed, particularly in the bays and coves. Most of the Coast Pilot notes are from preliminary information obtained by a survey party working on control in 1945.**

(202) **Charts 16561, 16566.–Chankliut Island,** as it opens out from Castle Cape, appears as three separate islands tangent to each other. The parts are connected by low necks of land; the E and central ones appear generally flat while the W part is conical. The slopes are grassy. Six pinnacle rocks are off the W point of the island and a small rock 10 feet high is 250 yards off this point.

(203) In the E cove on the N side of the island, small craft can find anchorage by steering **180°** toward the lowest part of the neck of land and anchoring in 5½ to 10 fathoms, sandy bottom. Surge from current and swell is felt in this anchorage.

(204) The channel between Chankliut Island and the mainland has been surveyed and found free from dangers. It is subject to moderate tidal current rips, especially in NE weather.

(205) **Nikolai Cove** and a small unnamed cove, on the mainland 1.5 and 6 miles, respectively, SW of Castle Cape, afford temporary restricted anchorages for small craft with winds from SW through W to N, but are subject to strong williwaws and are exposed to any swell. Necessity Cove, farther W, is considered a better anchorage.

(206) **Necessity Cove,** 9 miles SW of Castle Cape, is reported to be a safer anchorage in NW weather than Warner Bay or Ross Cove, but is exposed to swell. The conspicuous cape on the S side of Necessity Cove has a rock-cliff shoreline and high rugged peaks. Approaching from E a prominent light-colored rock cliff is visible along the E shore of the cape. A rock awash is 600 yards off the E shore of the cape and about 1 mile S of the entrance to the cove. Small vessels anchor in Necessity Cove close to shore in 7 fathoms; although subject to strong williwaws the cove affords good anchorage with winds from SW through W to N.

(207) **Charts 16561, 16566, 16013.–Warner Bay,** 11 miles SW of Castle Cape, extends N for 4 miles; it is too deep for anchorage except behind the narrow shingle spit on its W shore, 2.5 miles above the entrance. The entrance to the bay is between a small, grass-topped, pinnacle-tipped islet, just off the W side of the cape separating it from Necessity Cove, and a broken rocky point on the W side, that separates the entrances to Warner Bay and Ross Cove. Anchorage in the small cove behind the sandspit is close under the shore in 20 to 22 fathoms. It is protected from sea and swell, but the space is too restricted and the water too deep for safe anchorage during violent williwaws which occur

with a strong NW wind. The anchorage in Warner Bay can be reached by steering midchannel courses.

(208) **Ross Cove** is a small, deep, triangular-shaped bay on the W side and at the head of the short arm just W of the entrance to Warner Bay. The entrance to the cove, between the N end of a narrow shingle spit and the N shore of the short arm, is only 150 yards wide and cannot be identified until nearly at the head of the short arm. A bar at the entrance has a least known depth of 11 fathoms. The cove, which can only be used by small craft, is 23 fathoms deep at its center, but anchorage in 16 to 20 fathoms can be had close under the shore. From the head of the cove a long deep valley extends toward 3,697-foot-high **Virgin Peak.** The depth of water, restricted area, and violent williwaws make it a dangerous place during NW weather, but during SE or SW winds it is very quiet. The short arm leading to the cove and entrance into the cove may be traversed by steering midchannel courses.

(209) **Charts 16561, 16013.–Devils Bay,** 15 miles SSW of Castle Cape, has a wide deep entrance about midway between Warner Bay and Seal Cape. The N side of the entrance is marked by a high, detached pinnacle rock, close to the point of a narrow peninsula that has precipitous rocky cliffs and high rugged peaks. About 1.5 miles inside the entrance, the bay divides into two main parts, one extends NW 2 miles, with three small arms at its head, the other, in the form of a hook, extends SW 1.5 miles, then SE for about 1 mile.

(210) The main portion and center arm of the N part of the bay are too deep for anchoring. The NE and W arms of the N part of the bay were not investigated. In the hook-shaped S part of the bay is a small bight at the head of the first arm, that trends S. Anchorage, with restricted swinging room, can be had 400 to 600 yards from the head of the small bight in 16 to 20 fathoms, mud bottom.

(211) During periods of SW and NW weather, no williwaws were experienced in this anchorage, and during fresh NE weather only moderate williwaws were encountered. No sea or swell entered the anchorage during this storm, although the seas and swell were heavy outside. The anchorage was not tried during SE weather.

(212) The SE arm of the hook-shaped S part of the bay was found too deep for anchorage. At the head of this arm are large sections of flat shale spits, formed by rockslides from sheer cliffs that rise from the shoreline to a high rock-faced ridge with many towering pinnacle tips. The pinnacle tips and the sheer wall of this ridge present a very striking formation upon entering this arm of the bay.

(213) **Seal Cape** (56°00.0'N., 158°25.0'W.) and Cape Ikti are twin headlands on the Alaska Peninsula, 2.5 miles apart, each having high rugged peaks, jagged ridges, and sheer rock cliff shorelines. Seal Cape, 13 miles SW of Chankliut Island, is the most off-lying tangent as seen from the channel between Chankliut Island and Castle Cape. From the same direction the summit of a 2,074-foot-high narrow ridge, about 0.6 mile inside the tangent of the cape, appears as a very sharp peak. A breaker is 0.2 mile off the S end of Seal Cape.

(214) **Cape Ikti,** W of Seal Cape, marks the E side of the entrance to Kuiukta Bay. Numerous knife-edged pinnacles are very close alongshore near the end of Cape Ikti. A prominent high peak, 2,281 feet, is about 2 miles from the point of the cape.

(215) The open bay between Seal Cape and Cape Itki is generally deep and marked by extensive kelp in its NE portion. Anchoring depths for small craft can be found close under the shore in the NW part of the bay, however, it is wide open to all swell and sea and not recommended.

(216) **Kuiukta Bay** extends 14 miles inland and has 11 arms or bays of various sizes and shapes, 6 on the E side and 5 on the W side. Its shores, especially for the first 9 miles, are extremely precipitous, and have striking bare cliffs of great height, in contrasting shades of gray, red, brown, and black. The rocks appear to be well metamorphosed. A prominent band of black rock, resembling a lava flow, is on the E shore 4.8 miles NW from Cape Ikti, or just N from the prominent point marking the N side of the entrance to the first arm on the E side of the bay. A very prominent triangular-shaped high vertical cliff, dark brown in color, with irregular streaks of light color rock across its face, is directly ahead about 6.5 miles upon entering the bay from the SE.

(217) Kuiukta Bay entrance, 5 miles wide, is between Cape Ikti on the E and the sharp E point of an unnamed double headland on the W. This double headland marks the N side of the entrance to Mitrofania Bay. From midchannel at the entrance, Kuiukta Bay trends NNW for 4.5 miles where it narrows to a width of 2 miles, thence NW for another 4.5 miles at an average width of 2 miles, and thence NE at an average width of 1 mile, interspersed by a few small islets, for about 5 miles to the head of the bay, where arms spread out to the E and W. The bay is a natural funnel for winds and is known as being one of the windiest bays in Alaska. The water off the entrance and in the lower part of the bay is subject to tide rips, especially during NW weather.

(218) The water is generally deep close to shore throughout Kuiukta Bay and with few known exceptions in the arms leading from it.

(219) The entrance to the first arm on the E side of Kuiukta Bay, 4 miles NW from Cape Ikti, is 1 mile wide between a rounding, undercut, dark rock cliff point on the SE and a prominent gray cliff point with two large off-lying gray pinnacles on the NW. About 1 mile inside the entrance, the deep channel is constricted to a width of 500 to 600 yards between the N shore and the end of a steep-to boulder-gravel spit that extends from the S shore. The average width of the bay inside the spit is 0.5 mile; and the general depths are 40 to 50 fathoms, with deep water close alongshore, which is fringed by a very narrow strip of boulder gravel or shale. The bay is landlocked and no sea or swell enters it. Anchorage for a small vessel, with restricted swinging room, may be had within 0.5 mile of the head of the bay in 16 to 20 fathoms, muddy bottom. This anchorage was found to be very quiet when fresh NW winds prevailed outside in Kuiukta Bay. During the storm with fresh NE winds, moderate williwaws were experienced, but the survey vessel did not drag anchor. An all-season stream from a low waterfall is on the S shore inside the boulder-gravel spit.

(220) The second arm on the E side of Kuiukta Bay, about 6 miles from Cape Ikti, is a small narrow finger that extends 1.5 miles E between extremely high steep slopes. It is too narrow and the water too deep, 30 to 40 fathoms, for any suitable anchorage. A number of waterfalls enter this bay.

(221) The third arm on the E side of Kuiukta Bay, about 9 miles from Cape Ikti, has not been investigated. It is very narrow and extends SE about 1.3 miles. On the N side of the entrance to this arm is a small bight just SE of a small grass-topped islet. A restricted anchorage in 15 fathoms, sticky bottom, may be had for small craft at the entrance to this bight, about abeam of the SW end of the small islet.

(222) The fourth arm (see chart 16566) on the E side of Kuiukta Bay, about 1.7 miles from the head of the bay, extends SE about 1.5 miles. It has not been examined. The N side of the entrance to this arm is marked by a grass-topped U-shaped islet, with steep, rock-cliff shoreline.

(223) The fifth arm (see chart 16566) on the E side of Kuiukta Bay, about 0.7 mile from the head of the bay, extends E about 0.9 mile between sheer rock cliffs. It has not been examined.

(224) The sixth arm (see chart 16566) on the E side and at the head of Kuiukta Bay, extends E for about 2.3 miles. A small islet is about 1.4 miles E from the S entrance point.

(225) The first arm on the W side of Kuiukta Bay indents the cape opposite the abandoned Indian village of **Mitrofania.** It is separated from the small lagoon on which the village was by a narrow boulder-gravel spit. The arm, 1.8 miles long, extends W between sheer rock cliffs to its head at the steep-to boulder-gravel beach. Anchorage on the centerline of the arm about 0.6 mile from its head may be had in 18 fathoms, sandy bottom, but any swell piles up in this bay, as evidenced by large amounts of driftwood high up the boulder-gravel beach, and in NW weather williwaws are very strong. Anchorage here is not recommended except in favorable weather.

(226) The second arm on the W side of Kuiukta Bay, about 4.5 miles N of the point marking the W entrance to Kuiukta Bay, extends SW about 1.5 miles, and is restricted at its deep entrance to a width of 400 yards by a hook-shaped boulder-gravel spit that extends from the SE shore of the arm. Within the hook itself the water is very shallow; and SW of the hook for a short distance along the SE shore the water is shallow. Otherwise the arm, including the narrow entrance, is very deep. There is no anchorage in the bay, except for very small craft on the shoal bank close to the SE shore, just SW but not within the boulder-gravel hook.

(227) **Foot Bay** is the third arm on the W side and about 6 miles N of the W entrance to Kuiukta Bay. Foot Bay is about 1 mile wide and extends W about 2 miles. It is deep throughout, except close up in the NE corner where the bottom rises abruptly from 25 to 2 fathoms or less in the vicinity of the mouth of a fair-sized river entering the bay. The only available anchorage is in the SW corner of the bay, about 300 yards from the shore, in 20 fathoms, muddy bottom. This anchorage is off a small sand beach and a low valley that extends to the NE arm of Mitrofania Bay. The anchorage is swept by strong squalls in bad weather.

(228) **Windy Bay** is the fourth arm on the W side and is about 8 miles N of the W entrance to Kuiukta Bay. The S side of the entrance to Windy Bay is marked by a sharp, dark-colored pinnacle close to a dark-colored, high rock cliff point. From the entrance, about 1.3 miles wide, the bay trends NW for 1.5 miles, narrowing to 0.6 mile in width, where there is a small shallow bight extending 0.5 mile SW; and where the bay changes direction at a right angle to the NE to enter the N part of the bay, through a deep passage about 600 yards wide between low steep-to gravel spits on either shore. After entering the N part of the bay it widens to about 0.8 mile and trends in a N direction for about 1 mile, thence WNW, in a narrowing arm for about 2 miles. Anchorage, about 0.8 mile N of the gravel spit marking the W side of the entrance to the N arm, can be had about on the centerline of the bay in 15 to 20 fathoms, sticky bottom. Almost continuous fresh winds and williwaws, accompanied by fog and mist, were experienced here during a 36-hour period of W and NW winds.

(229) The small bight on the S side of Windy Bay shoals rapidly a short distance inside its entrance. A temporary anchorage, with restricted swinging room, can be obtained at the entrance in 15 fathoms, muddy bottom.

(230) The fifth and last arm (see chart 16566) on the W side and at the head of Kuiukta Bay extends W by N 2.8 miles from a small but high grass-covered islet to a low valley at the bay's head, where an easy portage leads to Chignik Lagoon. Good anchorage, 0.5 to 1 mile W of the small but high grass-topped islet marking the S side of the entrance to the arm, can be had in 19 to 15 fathoms, muddy bottom. This anchorage is exposed in NW weather to winds funneling through the low valley from Chignik Lagoon.

(231) **Routes.**–Passage into Kuiukta Bay from its entrance to Windy Bay may be made with safety by clearing either shore 0.5 mile, and the arms leading off this part of the bay may be entered safely on midchannel courses. The narrower N part of the bay should be entered on about midchannel courses between various islands and the opposite shore as follows:

(232) From a point in about midchannel, about 1 mile 040° from the pinnacle point marking the S entrance to Windy Bay, steer **040°** with the pinnacle point astern. On this course pass W of the low grass-covered island just off the E shore about opposite the N side of the entrance to Windy Bay; thence about 3 miles farther pass E of the next island, which has a sugarloaf top. From abeam of the sugarloaf-topped island steer **020°** for about 1.8 miles passing W of a U-shaped island.

(233) About 0.8 mile above the sugarloaf-topped island the water shoals abruptly from 45 fathoms to 7½ fathoms, then deepens to 30 fathoms or more. Pending a detailed survey, caution should be used when navigating this area. Directly after passing the U-shaped island, round on the port hand and on midchannel courses two closely spaced islands, the N one of which is the higher and is the last island at the head of Kuiukta Bay. Anchor in the W arm about 0.5 mile to 1 mile W by S of the last island in 19 to 15 fathoms, mud bottom.

(234) **Charts 16561, 16011, 16013.–Mitrofania Bay,** large and open, is bordered on the S by Mitrofania Island, on the W by Long Beach, and on the N by high, rugged capes of the mainland. The bay is deep and free of dangers, except for the area SW of the Brother Islands.

(235) The E side of the entrance to Mitrofania Bay is marked by an unnamed double headland, which is connected to the mainland by a low narrow strip of gravel beach just E of the abandoned Indian village of Mitrofania. Close inshore off the S tangent of the E headland is a towering brown pinnacle rock. Between the double headlands is a small arm with a short section of steep-to gravel beach at its head, and many huge pinnacle rocks in its NW part. This arm is exposed and not recommended for anchorage. At the E entrance to this arm is a prominent gray pinnacle rock about 200 yards off the shore.

(236) About 200 yards off the W point of the W headland is a rock that uncovers about 3 feet. Between this point and the S end of a high rugged cape 1.5 miles NW, is the entrance to a large unnamed bay with three small arms. The E arm affords an anchorage, with restricted swinging room, in its W part in 18 to 20 fathoms, muddy bottom; but the inner part entered through a very narrow passage, is a shallow lagoon. The site of the abandoned village of Mitrofania is at the NW corner of the lagoon. This site is not visible from the anchorage in the outer portion of the arm.

(237) The NE arm of the unnamed bay affords an anchorage, with restricted swinging room, in its SE part, just inside of a low gravel point, in 15 to 20 fathoms, muddy bottom.

(238) In the entrance to the NW arm, about 0.8 to 1.2 miles from the head of the arm, good anchorage, with 300 to 600 yards swinging radius in 15 to 20 fathoms, can be obtained. This anchorage was used by the survey vessel during a period of stormy weather, when a heavy swell was breaking high on the gravel beach at the head of the small first arm leading off Kuiukta Bay, opposite abandoned Mitrofania village, but effects of the swell were barely noticeable in the anchorage.

(239) **Ivan Bay,** an arm leading off the NW corner of Mitrofania Bay, is between rock-cliff shoreline and high rugged peaks on either side, and has a steep-to sand beach at its head, with a low, narrow river valley extending N. There are two small lakes, one on the E side and the other on the W side of the valley, just inshore of the low gravel beach. The water in Ivan Bay is deep and there is no anchorage.

(240) **Long Beach,** about 3 miles of steep-to black sand, forms the head or W shore of Mitrofania Bay. The sand beach is flanked on the N end by a vertical cliff, 600 to 800 feet high, made conspicuous by many strata of different colored rocks, and on its S end by a precipitous double headland, covered with a dense growth of alder bushes, and terminating at the S end in a long narrow point. An isolated rock is on Long Beach, about 300 yards back from the shoreline and near the base of the higher and N mountain of the double headland. This isolated rock, nearly rectangular in shape with vertical sides, is 60 feet high, and its slightly rounded top is covered with grass, ferns and small bushes. Seen from a distance it has the appearance of a huge native sod house. Extending back from Long Beach to the foothills of **Veniaminof Crater** is a broad river valley, in which are many ponds of fresh or brackish water. A large river empties into Mitrofania Bay about through the center of Long Beach. From a distance the double headland at the S end of Long Beach appears as an island located well offshore from the mainland.

(241) **Mitrofania Island,** about 5 miles wide between its N and S tangents, and about 6.5 miles wide between its E and W tangents, is somewhat crescent shaped, has a cluster of four rippled gray ridges, with steep jagged peaks of nearly the same height, and a rock cliff shoreline. The highest peak, a little E of the center of the island, appears fan shaped from the NE and is 2,011 feet high. The island is reported to be visible in excess of 30 miles when approached from the SW from a point S of Kupreanof Point (55°34.0'N., 159°35.5'W.); see chart 16540.

(242) Within the crescent on the S side of the island is a large open bay. The bay has a considerable anchorage area in depths of 15 to 20 fathoms along its NW shore, where cliffs of white and reddish hues rise vertically to a ridge of numerous pinnacle tops. In the SW part is a bight, formed by a sharp hook of the island to the E, with anchoring depths of 10 to 20 fathoms, sandy bottom. This bight is well protected from wind and sea from the SW through NW to N or NE, but is affected by any heavy swell. A small arm, with very restricted anchorage in 15 to 18 fathoms, sandy bottom, extends E about 0.4 mile from the NE part of the large open bay.

(243) In March 1975, the Coast Guard Cutter CONFIDENCE anchored in the NW part of the crescent-shaped bay on the S side of the island. The ship entered from the S on a course of **000°** until midpoint between the SE and SW entrance points (crescent points) of the bay, then changed course to **315°** and headed directly for the cluster of four rippled gray ridges on the island until within 1,600 yards of them, and anchored in about 18 fathoms, sandy bottom with good holding qualities, on the following additional ranges: snubbed peninsula on NE side of crescent (55°50.7'N., 158°47.2'W.), 2,400 yards; and snubbed peninsula on the NW side of crescent (55°49.8'N., 158°51.0'W.), 2,100 yards.

(244) The ship reported that the bottom contour during the entire entering transit remained flat, about 35 fathoms, then shoaled when about 3,000 yards from the cluster of four rippled ridges. The only danger noted was a rock awash about 200 to 300 yards S of the SE crescent tip. The ship experienced strong NW winds, however, the anchorage provided excellent protection, free of williwaws. Only slight winds, occasionally gusting to 20 knots, were encountered from a funneling wind over the lower center part of the island. Negative currents were noted in the area. The report further stated that the SE and SW corners of the crescent proved to be good radar targets, and that perhaps this bay provides the best protected anchorage in the area S of the Alaska Peninsula from winds WSW through N to ENE. The bay is easily accessible, however, because of its wide entrance, protection is not afforded from winds from the SW through the SE.

(245) On the N side of Mitrofania Island, a very small bay, open to the W, has anchorage for small craft in 15 to 20 fathoms, sandy bottom. A sandy beach is at its head. The bay is well protected from weather out of the N around through E to S. Sea and swell from the SW are reduced by the low sand and gravel spit that extends off the point about 3 miles W of the bay.

(246) **Spitz Island,** 1,073 feet high and 1.2 miles S of the SW tangent of Mitrofania Island, has sheer rock cliff sides and is conspicuous from the E and W. The island is reported to be a good radar target, and that it is less prominent from the SW than from the NE because of its blending with the background of larger Mitrofania Island to the N. A line of rocks extends S for 0.7 mile from the island. The most S rock is long, narrow, irregular, and about 43 feet high.

(247) **Brother Islands,** two in number and about 1 mile apart, are on a NNW line in the W central part of Mitrofania Bay and across the N part of the opening between Mitrofania Island and the double headland at the S end of Long Beach.

(248) The E Brother Island, 1.5 miles N of the N point of Mitrofania Island, is wedge-shaped with point to S, 0.3 mile on its longer E side and 0.2 mile on its N side. The island, 395 feet high, presents a flat profile, and from its summit drops sheer to the water's edge along the E side, where the high rock cliffs are undercut with caves inhabited by thousands of birds. A large rock, that uncovers 1 foot, is about 0.6 mile SSW from the S point of the island; and about on the same line 0.8 mile beyond the rock is the N end of a kelp-marked shoal area, that is 0.3 mile long and has a least known depth of 4 fathoms. This shoal has not been thoroughly surveyed and there may be less water over it. Between this shoal and the nearest point of Mitrofania Island, 0.7 mile to the E, is a deepwater channel that passes the shore of Mitrofania Island 300 to 500 yards off on a course of **234°** with the end of the low, grass-covered gravel spit forming the NW point of Mitrofania Island about dead ahead; and holding this course until about 0.5 mile from the gravel spit, thence changing course to the W and rounding the steep-to spit, then about 300 to 500 yards off.

(249) The W Brother Island, about 1.5 miles E of the S shore of Long Beach, is nearly round, 3.5 miles in diameter, with flat top

and sheer cliff sides. A large rock, 22 feet high, and rock that uncovers 1 foot, are 0.4 mile SSW and 0.6 mile S, respectively, from the center of the island. Between the W Brother Island and the mainland the water is deep and clear of any known dangers. Both Brother Islands have about the same elevation.

(250) **Charts 16556, 16540.**–The character of the shoreline between Mitrofania Bay and Ivanof Bay differs from that to the E in that it has several stretches of steep-to sand beaches, interrupted by low rocky headlands or high rocky capes. Long Beach, described previously, is the first of several beaches. The second stretch of sand beach, about 2.5 miles long, marks the head of a large open bay between the sharp pointed headland at the S end of Long Beach on the E and Coal Cape on the W. The low valley N of this beach joins that extending inland from Long Beach. Just inshore from about the center of this sand beach are two detached mountains on the valley plain. These two mountains appear as islands from a distance offshore. The S one, known locally as **Red Bluff Mountain,** 1,041 feet high, has reddish jagged pinnacle tips and is very prominent.

(251) Small craft can find temporary anchorage in 2 to 10 fathoms, sand bottom, about 1.1 miles SW of Red Bluff Mountain. Water may be obtained from a stream that empties into the NW part of the open bay.

(252) Coal Cape and Coal Point, about 10 miles apart, are two separate and distinct features of the Alaska Peninsula. Coal Cape is about 4.5 miles NW of Mitrofania Island (see chart 16013), and Coal Point is about 2.5 miles N of Paul Island.

(253) **Coal Cape** (55°53.5'N., 159°00.0'W.) is a prominent rock-cliff headland that rises to 1,818 feet and whose skyline is extremely broken and serrated. About 2 miles from its S tip the cape is about 2 miles wide and from its rock-cliff shoreline, long, low, sand beaches extend to the E and W. Fair-sized rivers break through the beaches on either side and close to the base of **Coal Cape Mountain Range.** The ridge that continues inland from the cape is a spur from Veniaminof Volcano. This spur is flanked both E and W by extensive river valleys that extend inland from the long sand beaches.

(254) **Perryville,** an Indian village, about 5 miles NW of Coal Cape, was established to provide for people who were driven away from the vicinity of Mount Katmai Volcano by the eruption of 1912. It consists of a number of wooden houses, including a small store and school, standing on the flat beach about 2.5 miles W of the foot of Coal Cape Mountain Range. There is no wharf and the water is too deep for anchoring off the steep-to beach in front of the village. Temporary anchorage for small craft can be found in 6 to 10 fathoms, 0.3 mile SE of the W of two conspicuous rock ledges just E of the village; a small 6½-fathom shoal, 0.6 mile SE of the same ledge, is the controlling depth for the area, but there are depths of 12 to 15 fathoms between this shoal and the beach. Radiotelegraph service is maintained.

(255) **Three Star Point,** a low alder- and grass-topped rocky headland about 1.5 miles SW of Perryville, separates two long curving stretches of sand beaches at a point about midway between Coal Cape and Coal Point Ranges. A prominent line of pinnacle rocks extends E about 400 yards from Three Star Point and a prominent pinnacle rock is about 200 yards S of the point. A series of low hills extending inland from Three Star Point divides the broad valley between the spurs leading to Coal Cape and Coal Point.

(256) **Chiachi Island,** the largest of the **Chiachi Islands,** lies with its most N point about 1 mile SE of Three Star Point and its S tangent about on line with the S tangents of Coal Cape, 5 miles to the NE, and Paul Island, 7 miles to the SW. The island is about 3 miles in extent from its sharp N point to its rounding S side and about the same distance from its most E point to its sharp W point. It has several rugged peaks of about the same elevation. A somewhat prominent one in the SW part of the island is 1,450 feet high. Pinusuk Island, Shapka Island, and Petrel Island also comprise Chiachi Islands.

(257) **Chiachi Bay,** in the E end of Chiachi Island, is about 0.6 mile in both width and depth. Anchorage is available for small vessels in 10 to 17 fathoms, mud bottom, protected from winds out of the SW through W to N, but any moderate swell, even from the SW, surges into the bay.

(258) **Pinusuk Island,** 0.9 mile long E to W, is 700 yards off the point on the N side of the entrance to Chiachi Bay; a high wedge-shaped ridge, rising to about 800 feet, has its point to the E and makes the island easy to identify from that direction. A towering pinnacle rock, 79 feet high, is 400 yards off the E end of Pinusuk Island. A rock island, 0.6 mile long and about 800 feet high, has its W end 350 yards off the point on the S side of the entrance to Chiachi Bay.

(259) Two more islands are off the NE shore of Chiachi Island. The N one, **Shapka Island,** is a sugarloaf 622 feet high, about 0.8 mile NE of the N point of Chiachi Island; the other, **Petrel Island,** is a small flat rock mass, about 400 yards off the midpoint of the NE shore of Chiachi Island.

(260) **Coal Point,** 5 miles SW of Three Star Point, is broad and irregular, has rock cliffs along the shores and a high sharp ridge that extends inland; two needle-shaped rocks are on the cliff slope on the SW point. A reef, marked by kelp at its outer end, extends 0.4 mile from the SE point. A rock, covered 1¾ fathoms, is 0.25 mile SSE of the southernmost tip of the point, and a rock, covered ½ fathom, is 1.1 miles E by N of the same tip.

(261) **Humpback Bay,** W of Coal Point and between Egg Island and the mainland, has a relatively flat bottom and depths of about 21 fathoms in its central part. Anchorage can be had in 7 to 10 fathoms, sand bottom, in the NE part of the bay, about 0.5 mile NW of a lone grass-topped pinnacle rock 22 feet high, and about 0.5 mile offshore from the sand beach marking this part of the bay. Caution is advised, however, as swells pile up in the bay through the entrance between Egg Island and Coal Point. For about 1 mile along the NW side of the bay the shore is rocky, with several detached rocks close alongshore. In the W part of the bay about 1.5 miles NW of Egg Island, is a short stretch of sand beach, from which a portage leads to Ivanof Bay.

(262) **Egg Island,** about 1 mile long and 0.5 mile wide, has vertical cliffs on its E side and steep grass-covered slopes on its W side. In the E central part of the island are several round-top summits of about equal height that rise to 500 feet.

(263) A low sandspit extends well offshore from about midway along the W shore of Egg Island, and a rock, 5 feet high, is about 125 yards off the N end. From the reef at the S end of the island a narrow underwater ridge of sand and gravel extends to the N shore of Paul Island; on a course of **233°,** with the tangent of Alexander Point ahead, the least depth is 5¾ fathoms over the ridge, which drops off abruptly both to the NE and SW.

(264) A deepwater passage can be made through Humpback Bay by steering midchannel courses around Egg Island, taking care to avoid the 3¾-fathom shoal NW of the island, thence

midchannel between Paul Island and the pinnacle off the jutting point on the E side of Alexander Point.

(265) **Alexander Point,** opposite the W point of Paul Island, is sheer and rocky and marks the end of the high cape bordering the E side of Ivanof Bay. The first definite peak on the cape, about 1 mile N of Alexander Point, is 1,572 feet high. On the E side of the cape, about 1 mile N of Alexander Point, is a jutting rocky point that is heavily covered with grass and alder, and just off the end of this jutting point is a large pinnacle.

(266) **Paul Island,** somewhat hook shaped and for its entire length, has high sharp ridges and peaks that reach an elevation of 1,558 feet in its N part. For a short distance along the NW side of the island is a low grass-covered sandspit, and inside of the hook of the island, which forms the N shore of Kupreanof Harbor, the beach is low sand and gravel. In this region is a small saltwater pond at the foot of the steep grass- and alder-covered slopes.

(267) In 55°46.9'N., along the E side of Paul Island, is a semicircular 0.3-mile-wide cove that is danger free except for the rocky point and reef that form the SE side. Small boats can anchor in 3 to 5 fathoms, sand bottom, 200 to 400 yards off the sand beach. Water can be obtained from any of the several streams in the vicinity. Along practically all the rest of the Paul Island shores are sheer rock cliffs.

(268) **Jacob Island,** shaped like a leg of mutton with its point to the S, is about 4 miles long. The highest point, about 1 mile from its N end, is 1,647 feet high. From the highest point a sharp ridge, that drops almost vertically to the E shore, extends S to **Noon Point,** meeting the sea in a narrow overhanging precipice. N of the highest point alder-covered slopes broaden out to form the S side of Kupreanof Harbor. The coast of Jacob Island is foul with kelp and numerous rocks.

(269) **Kupreanof Harbor,** enclosed by Paul and Jacob Islands, is circular in shape, 1.1 miles across, and free from dangers. It is sheltered from all directions and is the most accessible safe harbor in a wide region. Williwaws have been experienced here with NE and E gales, but the muddy bottom provides good holding ground.

(270) The W entrance to Kupreanof Harbor is 0.7 mile wide and danger free. To enter, steer **090°** through the middle and change course to **058°** when the point on the N side is abeam; when the S entrance is about to open, anchor in the N central part of the harbor in 10 to 11 fathoms, mud bottom, with the tangents of the point at the S entrance in range and bearing 151°.

(271) The curving S entrance is 0.5 mile wide and has a channel controlling depth of 4 fathoms NE of the middle. Vessels should approach from the SW on a course of **020°,** passing 0.75 mile NW of the S tip of Paul Island and 0.25 mile SE of the easternmost point of Jacob Island; when abeam of the latter, steer **000°** for 0.25 mile, thence **317°** for 1.2 miles to anchorage. The 317° course will carry a vessel in the best water NE of midpassage and about 0.15 mile off the shore of Paul Island.

(272) The current movement within the harbor is irregular in direction and velocity. Current velocities of one knot have been observed.

(273) Fox farms and attendant buildings are on shore in Kupreanof Harbor on Paul Island and Jacob Island.

(274) **Ivanof Bay,** between Alexander Point and Kupreanof Peninsula, is from 1 to 3 miles wide and about 7 miles long in a N-S direction. Bluffs and high ridges parallel both shores from the entrance to the N part of the bay where low valleys lead off from both the E and W shores. When SW of Alexander Point and proceeding up the bay, **Road Island,** a round-topped, steep-sided island 421 feet high, is seen in the channel 4 miles ahead. Two miles above Alexander Point a grassy headland and a grass-topped, taper-pointed islet 115 feet high are on the E shore. The W shoreline here is precipitous and rugged, the bluffs rising from 1,000 to 2,500 feet above the shoreline. W and N of Road Island is an area of sandspits, tideflats, and lowland. Several steep-sided, grass-topped islets are connected to the sandspits at low water. W of northern Ivanof Bay is a large lagoon and beyond are marshy flats across which **Granville Portage** leads to Stepovak Bay. The N shore of Ivanof Bay is hilly. To the NE of the bay a low valley and flats extend into the interior.

(275) A cannery wharf, with a least depth of 22 feet alongside, and marine ways are midway along the N shore of Ivanof Bay. The buildings of a fox farm are along the cove in the NW shore of Road Island; a dilapidated wharf in the cove is usable only by small boats on the higher half of the tide. Radiotelegraph service is maintained.

(276) Vessels can anchor in 15 fathoms, sticky mud bottom, 0.3 mile SSE of the cannery wharf. To be avoided are the mudflats that rise abruptly from depths of 10 fathoms on the E side, and the ledge that makes out from the northernmost point on the same side.

(277) A ledge with places that uncover 1 to 3 feet is 0.4 mile SE of the NE point of Road Island; a rock, that uncovers 2 feet, is 0.9 mile E by N of the same island point and 0.3 mile from the E shore of the bay. A pinnacle rock, covered 1 fathom, is about 150 yards SW of the cannery wharf.

(278) When SE weather prevails along the coast, the wind often blows in the N part of Ivanof Bay from the NE, coming down through the valley on that side of the bay. The N part of Ivanof Bay is well protected from S swells.

(279) Depths of 12 to 15 fathoms can be carried through the channel W of Road Island. From a position 1.4 miles W of Alexander Point, steer **337°** until the S end of Road Island is 450 yards on the starboard beam; thence **353°** for 0.9 mile to a position where the N end of the island is 600 yards on the starboard beam; and then **014°** for the cannery wharf, taking care to avoid the covered rock 150 yards off the SW corner.

(280) The channel E of Road Island has a controlling depth of 18 fathoms but rocks off both shores make navigation dangerous for strangers; passage should be made at low tide when the rocks are bare and can be seen. From a position 1.4 miles W of Alexander Point, steer **336°** until the small grass-topped islet 2 miles NW of Alexander Point is 0.6 mile on the starboard beam; thence **000°** until the N end of Road Island is 0.5 mile on the port beam; thence **334°** until the highest islet on the W side of the upper bay is 1 mile on the port beam; and thence **014°** for the cannery wharf.

(281) **Routes, Castle Cape to Kupreanof Point (Alongshore).**–From a point 1.5 miles SE of Castle Cape (see chart 16011), steer **220°** for 5.4 miles. When abeam of the W end of Chankliut Island, 1 mile, steer **216°** for 12.8 miles to clear Seal Cape by 1 mile. A breaker is 0.2 mile off the S end of Seal Cape. In thick weather it is recommended that the course be shaped to pass Seal Cape 1.5 miles off.

(282) When the E tangent of Seal Cape and the point at the S entrance to Devils Bay are on range, bearing 000°, steer **249°** for 9.1 miles with the N tangent of Mitrofania Island ahead. This course passes Cape Ikti about 1 mile off.

(283) When the prominent rocky points marking the entrance to the first arm on the W side of Kuiukta Bay close, bearing 013°, steer **282°** for 6.9 miles with N slope of mountain on flats W of Long Beach ahead. This course passes N of the W Brother Island at a distance of 1 mile.

(284) When 0.5 mile beyond the range of the W tangents of the W Brother Island and Mitrofania Island, bearing 194°, steer **201°** for 3 miles. This course passes about 0.6 mile off the W Brother Island and about 0.6 mile off the long pointed headland at the S end of Long Beach.

(285) When Red Bluff Mountain opens on the Long Beach headland, bearing 305°, steer **246°** to a position 0.8 mile S of Coal Cape; thence **270°** to a position 0.3 mile S of Shapka Island; thence **292°** to a position 0.3 mile N of the N tip of Chiachi Island; and thence **240°** for 6.2 miles to a position 0.8 mile N of the most N tip of Paul Island. Then steer **233°,** with Point Alexander ahead and the prominent, low headland of Three Star Point astern, for 2.8 miles, using the marked passage, described earlier, between Egg Island and Paul Island.

(286) When the W tangent of Paul Island comes on range, bearing 165°, with the highest point of Jacob Island, steer **201°** for 16 miles with the center of Egg Island astern. This course passes about midway between Paul Island and the jutting point on the E side of Alexander Point; about 0.8 mile off the W coast of Jacob Island; midway between Noon Point and Leader Island; 1.8 miles E of Fox Cape; and 2 miles E of Kupreanof Point.

(287) The E shore of **Kupreanof Peninsula** from Ivanof Bay to Kupreanof Point is bold and precipitous, broken only by a broad sand beach, 1.5 miles long, 9 miles N of Kupreanof Point, and by a small sandy cove 4.5 miles N of Kupreanof Point.

(288) **Leader Island,** between Kupreanof Peninsula and Jacob Island, is a turtleback-shaped, rocky, islet 131 feet high. It may be passed in depths of 23 to 37 fathoms on the W side and 32 to more than 50 fathoms on the E side. A 17-fathom bank is 1 mile N of the island.

(289) **Hag Peak,** a black dome-shaped mountain, the seaward face of which consists of rows of tilted basalt columns, is at the S side of the entrance to the long sandy beach cove and 3 miles WSW of Leader Island. The peak is a distinctive landmark.

(290) **Fox Cape,** 4 miles SSW of Leader Island, appears as a pyramidal-shaped headland with several off-lying islets. The largest of these islets has a sloping flat top and sides with a number of deeply carved caves.

(291) S of Fox Cape the shoreline is bold and reef fringed. A group of three pinnacles, 25 feet high, are 1.5 miles S of the cape.

(292) **Kupreanof Point** (55°34.0'N., 159°35.5'W.), the SE end of Kupreanof Peninsula, appears as a row of rugged monoliths, graduated downward from the high point of the 862-foot cape. Several reefs fringe the base of the cliffs at the SE end of the point. A reef, that breaks in a moderate-to-heavy swell, is 700 yards NE by N of the outer end of Kupreanof Point.

(293) The S shore of Kupreanof Peninsula between Kupreanof Point and Bluff Point is bold and rugged, broken only by a sand beach-bordered cove about midway between the points.

(294) **Stepovak Bay,** NE of the Shumagin Islands, is large and open with numerous small bays and coves indenting the E and W shore. They are between steep ridges on both sides. At the heads of each of these smaller bays are stretches of sand beach behind which are lagoons and grassy flatlands.

(295) Kupreanof Peninsula on the E side of the bay is mountainous. The higher peaks are rocky, barren, and scarred from erosion. The lower slopes are grass covered with patches of alder. The draws and lines of drainage on the lower slopes have dense growths of alder.

(296) The N shore of Stepovak Bay is a long stretch of wide sandy beach, behind which are grass-covered sand dunes. Beyond the dunes a belt of flat tundra extends into Ivanof Bay.

(297) The W shore of Stepovak Bay is mountainous, on a more rugged and massive scale than is the terrain of Kupreanof Peninsula. Snow and ice fields fill the upper plateaus. A small volcanic vent in the high country above Ramsey Bay often sends out a cloud of vapor. The steep terrain surrounding the fluted shafts of Mount Stepo (55°43.0'N., 160°11.0'W.) is rich in beauty and grandeur.

(298) Stepovak Bay is much traveled by fishing craft during the salmon season, and gill nets are laid out from many of the rocky points. Brown bear, wolverines, and foxes track the shores, and there are trappers' cabins in several of the tributary bays.

(299) In the central part of Stepovak Bay, the bottom is regular, with depths ranging from 40 fathoms in the N part to 90 fathoms in the S part. Near the E shore the depths vary from 20 to 40 fathoms. N of Pad Island the bottom is rough, and there are several submerged pinnacles. On the W side of the bay, reefs and submerged shelves make off from many of the headlands. Some of these reefs bare for a few hundred yards offshore, then continue as submerged shelves with depths of 10 to 20 fathoms extending several miles off these points.

(300) The bottom in most of the bays is a sticky dark-green mud, in depths of 15 to 20 fathoms.

(301) Kupreanof Peninsula partly protects this bay from the SE swell common along this coast during the summer. The bays and coves on the W side of Stepovak Bay are more exposed to the SE swell. These bays are also subject to violent winds and downdrafts during NW weather. For this reason the bays on the E shore offer more protected anchorages than do those on the W shore.

(302) **Bluff Point,** the southernmost feature on the E shore of Stepovak Bay, is a sharp narrow promontory about 700 feet high. It bristles with a descending series of projecting nobs and points.

(303) **Boulder Bay,** N of Bluff Point, the southernmost bay on the E side of Stepovak Bay, offers good anchorage but is somewhat exposed to S swells. The bottom is very even, sloping gradually from 20 fathoms at the entrance to 15 fathoms near the anchorage. The bottom is a black gritty mud. The anchoring depth and swinging room make Boulder Bay suitable for medium-draft vessels.

(304) **Cub Point,** on the N side of Boulder Bay, is a broad-topped, rounding headland about 900 feet high. It has almost perpendicular faces that are strongly marked with inclined bands of light and dark stratified rock. A patch of white rock halfway up the outer face of Cub Point makes an identifying landmark.

(305) **Fox Bay,** on the N side of Cub Point, is the largest tributary on the E side of Stepovak Bay. Vessels of any size can find protected anchorage in Fox Bay except during very strong W winds. An islet, 88 feet high, in the SE part of the bay is a good leading mark for vessels entering. The entering course is **090°** for the islet; when 1 mile from the islet, and with a low gravel point that begins near the inner end of a grass-topped bluff abeam to starboard, change course to **065°** and proceed to anchorage in 15 to 18 fathoms, or less if desired, in the large cove at the head of the bay.

(306) The cove on the SE side of Fox Bay is the most protected anchorage for small craft in Stepovak Bay. Enter Fox Bay as in the preceding paragraph and when 1 mile from the islet change course from **090°** and steer **108°** for 0.9 mile to a position where the islet is 0.3 mile on the port beam; thence **135°** for 0.6 mile to anchorage in 8 to 9 fathoms, sticky mud bottom. Water can be obtained from a waterfall on the SE side of the cove.

(307) The N part of Fox Bay should be avoided by strangers. A reef, 750 yards long, 300 yards wide, and awash at lower low water, is 1 mile SSE of the headland on the N side of the entrance.

(308) **Dome Point,** the N entrance headland of Fox Bay, is precipitous with a somewhat level grass top. A large yellow scar on the eroded face identifies this headland.

(309) **Island Bay,** N of Fox Bay, is large and open. Its shores are indented by several coves. An islet, 26 feet high, is in the inner part of the bay and makes a good leading mark for vessels entering the bay. In entering Island Bay vessels should keep at least 0.5 mile offshore. An extensive submerged ledge makes off from the cove 0.8 mile WSW of the islet. This must be avoided when approaching the anchorage.

(310) Anchorage WSW of the 32-foot islet is in 17 to 20 fathoms, mud bottom. Fishing craft sometimes anchor E of the islet in 3 to 6 fathoms, blue mud bottom. A submerged ledge makes off from the E end of the islet, and a shoal, covered 4 feet, is near the bay's N shore NW of the islet.

(311) **Stonehouse Cove** is a small cove 1 mile inside the N entrance point of Island Bay. A long reef extending halfway across the entrance breaks the sea in this cove which has a very smooth, white sand bottom that bares at extreme low tides. The cove is used by fishermen to careen their craft.

(312) **Pad Island,** off the N approach to Island Bay, is low, flat, grass covered, and about 0.5 mile long and 0.2 mile wide. A narrow channel separates the island from the main shore. Kelp patches and foul ground extend N from Pad Island. A pinnacle, covered ¾ fathom, is 0.9 mile S of the island and another pinnacle, covered 1½ fathoms, is 0.4 mile NNE of the island. A large shoal with a least depth of 4¾ fathoms is 1.3 miles N of Pad Island.

(313) The shore from Pad Island N consists of rugged cliffs. Two striking rock formations are 1.5 miles N of Pad Island. One is a chimneylike column, 120 feet high, projecting from the cliff slopes. The other is a spikelike rock, 400 feet high, projecting above the cliff line. This spike is noticeable from a distance.

(314) The small cove in the NE corner of Stepovak Bay is rimmed with rocks and reefs except at its head where there is a sandspit and a lagoon. Depths are 4 to 8 fathoms, mud bottom at the entrance and decrease gradually toward the head.

(315) Along the N shore of Stepovak Bay is **Stepanof Flats,** a 5-mile stretch of broad sand beach. Behind the beach are grass-covered sand dunes and beyond are extensive flats of tundra. Two streams flow out of these flats, often bringing silt that discolors the sea for large areas around their mouths.

(316) **Gull Rock,** just offshore from Stepanof Flats and about midway along the N shore of Stepovak Bay, are two bare rocks joined by reefs; the S rock is about 19 feet high and the N one about 4 feet high. From S they appear light colored against the dark background of the hills. The water is shallow between the rocks and the shore.

(317) **Louies Corner** is at the W end of Stepanof Flats. Hills and a rocky headland are W of Louies Corner. Behind Louies Corner is a detached cone-shaped hill, 746 feet high, that shows distinctly from the S end of the bay. An anchorage with 17 to 20 fathoms, mud bottom, and exposed to S weather, is 1.3 miles W of Gull Rock.

(318) **Ramsey Bay,** at the N end of the W shore of Stepovak Bay, is fairly open and exposed, and in the central part of the bay the depths are too great for anchoring. A broad sand beach stretches for several miles around the N and NW shores of Ramsey Bay. At the E end of this beach is **Bales Landing.** Small vessels can anchor in 5 to 10 fathoms, green mud bottom, 0.3 mile S of the landing; the anchorage is exposed to S weather.

(319) W of Bales Landing two streams form deltas off the sand beach. On these deltas, sandbars and sandflats bare at low water for more than 0.5 mile offshore from the high-water line.

(320) From Ramsey Bay S to Dent Point, the shore is steep and rocky. At the Ramsey Bay end of this stretch is a rocky headland; reef and rocks, that uncover 1 to 4 feet, extend 0.2 mile SE from the headland.

(321) **Dent Point,** between Ramsey Bay and Grub Gulch, is broad and rounding, backed by steep cliffs, and fringed with reefs. Two conspicuous rocks, 19 and 36 feet high, are joined at low water with the southernmost tip of the point. A rock, covered 2 feet, is 0.3 mile offshore, 1.1 miles NE of the same tip. Vessels should keep at least 0.5 mile off this shore.

(322) **Charts 16553, 16540.–Grub Gulch** (55°48'N., 159°57'W.) is marked by two grass-covered islets and several low, bare rocks and reefs. The bottom near the entrance is very broken, but a channel with 12 fathoms or more can be carried to the head of the bay by favoring the W shore well away from the vicinity of the islets. The anchorage at the head of Grub Gulch is deep, 20 to 23 fathoms, mud bottom; swinging room is limited. At the NE end of the beach at the head of the bay, the mouth of a stream is surrounded by sandflats that bare at low tide. A vessel should favor the SW end of the beach when anchoring.

(323) The outer part of Grub Gulch is not suitable for anchorage because the average depth is about 45 fathoms, and there is little or no swinging room in the shoaler depths near shore.

(324) **Red Hill,** a sharp, steep, red-hued mountain, 2,343 feet high, is on the point between Grub Gulch and Clark Bay. A reef extends 0.3 mile SSE from the outer end of the point to a conspicuous pinnacle rock 20 feet high.

(325) **Clark Bay** is a large open bight backed by two valleys. A grass-covered islet is near the E shore of the bay. It is reported that small fishing craft anchor NW of this islet in 6 or 7 fathoms, finding some lee from SE storms.

(326) Near the W end of the E bight of Clark Bay are two pinnacle rocks. The bottom is foul between these pinnacles and the W shore. The W bight of Clark Bay is called **Little Norway.** Anchorage off the sand beach is in 15 fathoms, mud bottom. During NE storms the winds draw down across this bight with terrific force.

(327) The W shore of Clark Bay consists of a rocky bluff line. A conspicuous waterfall is about 1 mile N of the entrance to the bay. An odd-shaped, slender, pinnacle rock is about 0.2 mile S of the waterfall.

(328) **Waterfall Point** is a broad, rounding headland and ridge separating Clark Bay and Orzinski Bay. A waterfall, visible for many miles, marks the S tip of this point. This waterfall, viewed in profile, appears to spout its stream clear of the bluff line. Reefs and rock ledges make off Waterfall Point for 0.5 mile, and a

3¾-fathom shoal area is 1 mile E of the point; clear the point by at least 1.5 miles.

(329) **Orzinski Bay** has steep slopes along most of its shores, but there are grassflats and a lagoon at the head. It is shoaler than the adjacent bays but seems to have better protection at times from NW storms. A shoal with depths of 7 feet or less extends 0.5 mile off the N shore. The bay must be navigated with caution; the best water is found by favoring the N side of the entrance, then heading for the middle of the bight in the S shore and strongly favoring the S shore to the head. The bottom rises rather abruptly but anchorage is possible in 10 to 20 fathoms, mud bottom, about 0.2 mile from the head; the anchorage has good holding ground but is exposed to SE weather.

(330) An alternate anchorage that offers some protection from SE weather is found off the midbight in the S shore, 0.8 mile WNW of the E end of Elephant Point. Anchor in 13 fathoms, mud bottom. Two abandoned buildings are at the head of Orzinski Bay. One is near the mouth of the stream and the other is farther upstream at the base of a hillside.

(331) **Elephant Point,** on the S side of the entrance to Orzinski Bay, is a sharp-ridged promontory, 655 feet high, bound by sheer cliffs having striking bands of stratified rock. The cliffs at the outer extremity of Elephant Point are deeply undercut. A ledge that uncovers, extends for 0.5 mile ENE to SE from the point. Shoal indications extend 1.5 miles ESE of the point; vessels should clear the point by at least 1.5 miles.

(332) **American Bay** is open and exposed in its outer part, but narrows into a long fiord which is fairly well protected from the outside swell. This inner bay is surrounded by tremendously high peaks of a striking and rugged appearance. In the outer bay a pinnacle, covered 4¼ fathoms, is 0.6 mile SW of Elephant Point, and another pinnacle, covered 4¾ fathoms, is 0.3 mile SW of the rocky point 2 miles along the N shore from Elephant Point. A sandspit projects from the NE shore and a gravel spit from the SW shore 2.5 and 3.5 miles from the entrance.

(333) The valley at the head of American Bay shows considerable evidence of glacial deposit. There are shoals and low-water sandflats off the mouth of the stream that flows from the valley. Depths in the inner bay are 12 to 30 fathoms, and the bottom rises steeply except off the flats at the head. Anchorage is possible for small craft in 8 to 10 fathoms, mud bottom, near the head of the bay; other anchorage is not recommended because of the depths and limited swinging room.

(334) **Blunt Point,** on the S side of the entrance to American Bay, is a broad cape with grass-covered slopes above a shoreline of eroded bluffs. Reefs make off Blunt Point and vessels should stay well clear of it.

(335) **Wind Bound Bay** is a small cove 1 mile W of Blunt Point. Inside the cove is a small valley surrounded by high mountains. It is reported that small fishing craft anchor off the mouth of the creek in 3 fathoms.

(336) **Chichagof Bay** (55°39.0'N., 160°15.0'W.), 3 miles W of Blunt Point, is used as an anchorage by small fishing craft. A reef extends off the N side of the bay and a 2¾-fathom shoal is 0.3 mile off the N entrance point. A reef fringes the bold headland separating Chichagof Bay and West Cove to the S. A shoal area with depths increasing to 4½ fathoms extends 0.5 mile SE from the headland; the outer extremity is marked by kelp. Depths decrease from 10 fathoms at the entrance to 5 fathoms 0.4 mile from the beach at the head of the bay. The anchorage in the upper part of the bay is sheltered except from the SE; the bottom is hard sand.

(337) **West Cove** is small and fringed on both sides with covered rock ledges. A ledge extending almost 0.5 mile SE from the SW point of the cove has pinnacles that bare at various stages of the tide; a 3¾ fathom shoal is 0.7 mile SE of the point.

(338) **Dorenoi Bay,** 7.5 miles SW of Blunt Point, is open and exposed to the E and SE, and subject to strong winds through low ground to the NW. Both sides of the bay are mountainous, and rock ledges border the shores. At the head of the bay is a long stretch of sand beach. The bottom near the entrance is extremely broken; depths vary from 20 to over 70 fathoms. Approaching in midchannel, a good anchorage in 30 to 10 fathoms, good holding ground, is at the head of the bay.

(339) **Renshaw Point,** at the base of a rugged mountain, marks the S entrance of Dorenoi Bay. The deeply eroded orange-buff cliffs are conspicuous for many miles. Black rocks and reefs make off the point.

(340) **San Diego Bay,** the open bight N of a string of islets and rocks between Guillemot Island and the mainland, is marked on its N side by a low yellow cliff. San Diego Bay is much used during the salmon fishing season as an anchorage and as a fish transfer point. The approach N of Guillemot Island is deep and clear. Smaller vessels may carry 4 fathoms through the passage between the W end of the island and a conspicuous pinnacle rock that is midway of the distance to the mainland shore.

(341) **Guillemot Island,** about 1.6 miles long, 0.3 mile wide, and 623 feet high, has bold precipitous cliffs on the N side and low bluffs on the S side. Above the low bluffs the grass-covered ground slopes evenly upward to the top of the cliffs on the N side. A neck of land extends off the S side of the island to a rocky, round, and steep-sided headland. On the E shore, between this round headland and the cliffs to the N, is a bight with a sandy beach.

(342) Off the SW end of the island is a flat and sandspit. A fisherman's cabin is on this flat. Smaller craft often anchor on the S side of the island in the bight E of the sandspit, in 1 to 5 fathoms. NW and NE weather causes strong winds to sweep down the grassy slopes, so this anchorage should be used with caution.

(343) The water is fairly deep off the N and S sides of the island, but a ledge covered 6½ fathoms is 1.1 miles E of its E end.

(344) S of Guillemot Island the coast is bold and precipitous, except for two stretches of low sand beach bordering valleys that break through from the interior. Rocks and reefs fringe the bases of the cliffs. A pinnacle, 40 feet high, is off a point 3 miles SW of Guillemot Island.

(345) **Lumber Bay,** known locally as **Rough Beach,** is on the E face of Swedania Point, 2 miles NE of its SW end, and consists of a shallow bight at the entrance of a valley; the beach is a dike of cobbles thrown up by the sea, and is capped by a great windrow of driftwood.

(346) **Swedania Point** is the seaward end of a ridge 1,309 feet high; at the extremity are rugged cliffs, and on the SW side is a gravel spit at the foot of the cliffs. The profile and end slope are striking and unusual, resembling in magnified outline the end of an artificial earthwork or bunker, back of which the mountain rises steeply. Strong williwaws blow on the lee side off the E face. One mile E of Swedania Point a group of rocks, bare at low water, extend S.

(347) **Balboa Bay,** known locally as **Portage Bay,** offers good shelter on the E side about 5 miles from Swedania Point in a

small bight with a low gravel point S of it at the mouth of a large ravine containing a stream. The midchannel into the N arm is deep. When the coal mine at Herendeen Bay, on the other side of the Alaska Peninsula, was in operation, supplies were landed here and carried across the trail by pack train, a distance of about 15 miles. The highest point on the trail, less than 600 feet, is near the S side of the peninsula. This portage is still used frequently.

(348) On the W shore of Balboa Bay, a reef extends 600 yards off the entrance point and then fringes the shore to the N at a distance of 200 to 600 yards offshore. Outside the reef the water deepens rapidly to the middle of the bay.

(349) **Albatross Anchorage,** near the head of the N arm of Balboa Bay, is a secure harbor with depths of 8 to 2 fathoms. During strong N winds, Albatross Anchorage is subject to strong wind-funneling from the mountain passes. During this period Lefthand Bay is the preferred anchorage. **Reef Point** is on the E side of the entrance to the harbor; a reef extends almost 0.1 mile off the point. The best anchorage is in midchannel, 0.6 mile N of Reef Point, and W of **Ballast Island,** in 5 to 8 fathoms. Small craft may anchor in the bight on the W side opposite Ballast Island in 8 to 12 feet and secure better protection; avoid a ledge that uncovers about 4 feet in the N part of the bight.

(350) **Lefthand Bay,** known locally as **Left Arm,** on the W side of Balboa Bay, is protected to some degree from S winds. However, the winds tend to funnel into the entrance of the bay. The bottom varies from mud to shale and does not provide good holding ground in strong winds. Shoals extend about 500 yards off the N and S shores at the entrance, and about 200 to 300 yards off the shores inside the bay. Midchannel depths are 25 fathoms at the entrance, shoaling gradually toward the sand beach at the head of the bay. **Kagayan Flats,** between Lefthand Bay and Beaver Bay, are low and marshy.

(351) **Cape Aliaksin** separates Balboa Bay and Beaver Bay and has no distinctive form; it is of a rounded outline and a low rounded profile. Lowland extends for some distance from the shore all around the cape. The summit, 2,073 feet high, is broad and flat. There is shoal water near shore all around and a rock awash about 0.3 mile off the SW side. A reef extends SE 600 yards off the cape. The cape is difficult to identify from W.

(352) **Chart 16540.–Shumagin Islands,** comprising 15 sizable islands and many islets and rocks, extend for a distance of 60 miles from the coast of the Alaska Peninsula from which the group is separated by Unga Strait.

(353) The inside passage along the Alaska Peninsula in the vicinity of the Shumagin Islands is through Gorman, Korovin, and Unga Straits, and N of Jude Island.

(354) In general, the Shumagin Islands are bold and mountainous, and the shores are broken in many places by inlets that afford good anchorages. The shores are rockbound close-to. Fishing stations and camps are scattered throughout the group, and good fishing banks are off the islands. Fox and cattle raising are carried on to some extent.

(355) **Caution.**–Many areas adjacent to the Shumagin Islands are unsurveyed and may present unknown hazards to navigation.

(356) **Weather, Shumagin Islands.**–The prevailing winds in summer are SW. This wind brings in a sea fog which lasts as long as the wind prevails, and usually covers Unga and Popof Islands, the SW section of Nagai Island, the SW shores of Big and Little Koniuji Islands and Simeonof Island. In Popof Strait and Humboldt Harbor, the lay of the land thins the fog to mist through which the shores are visible and often these waters are in a clear pocket when the fog around is heavy. The SW wind also produces a moderate swell and choppy sea on the SW side of the islands. While this condition prevails on the SW side of the group, it is generally clear on the opposite side, with light breezes, smooth sea, and no swell. A landfall for the Shumagins, in summer, should therefore be made to NE, and the most unmistakable point is Castle Rock. A north breeze dries and clears the islands to crystal clearness.

(357) **Charts 16553, 16540.–Unga Strait** separates the Shumagin Islands from the Alaska Peninsula and has a narrowest width of 2.9 miles between the N end of Unga Island and Cape Aliaksin and depths of 16 fathoms or more. Either shore of the strait should be cleared by at least 1 mile. The current generally sets W. (See Tidal Current Tables for predictions.)

(358) **Unga Spit Light** (55°24.4'N., 160°43.8'W.), 40 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the N end of Unga Island.

(359) **Chart 16540.–Simeonof Island,** the most E of the Shumagin Islands, is about 5 miles long and 3.5 miles wide. It is composed of two clusters of hills, the SE and higher ones being about 1,436 feet. These hills are separated by a low plateau that is nearly cut in two by a very irregularly shaped inlet known as Simeonof Harbor.

(360) The coast of the island is fringed with reefs and shoals. Those on the S and SE sides are variously reported to extend from 3 to 7 miles offshore; those on the E side, 3 miles; and those off the other shores, 0.5 mile. A rock, on which the sea breaks at low water, has been reported halfway between Simeonof and Chernabura Islands.

(361) **Simeonof Harbor** makes in from the W side of the island. A reef extends about 0.5 mile W from the N point of the entrance to the harbor. Off the S point of the entrance is a low, flat, rocky island fringed with reefs. Thick kelp beds are parallel to the reefs on either side of the harbor entrance. The harbor is protected from all winds, the entrance is tortuous, with reefs on either side; the shores are rocky and the water very shoal. The inner anchorage is in 2½ fathoms, with not over 2 fathoms at the lowest tide; the bottom is smooth gravel. Anchorage, exposed to W winds, may be had in the outer part of the harbor in about 4 fathoms, about 0.5 mile inside the entrance.

(362) **Twelve Fathom Strait** separates Simeonof and Little Koniuji Islands and is 2.2 miles wide and has depths of 10 to 20 fathoms except for a 6-fathom shoal area near the middle. A few kelp patches are on the Simeonof Island side.

(363) In 1991, a dangerous submerged rock with an unknown depth was reported in about 54°57'24"N., 159°21'30"W.

(364) **Little Koniuji Island** is very irregular in shape, consisting of three parts, 1,200 to over 1,600 feet high, connected by raised sand beaches. The S end terminates in a high rocky pointed cape, with a reef marked by a breaker extending about 0.3 mile SW from it. The E coast is indented by two coves, and there is a large harbor on the W side.

(365) **Sandy Cove,** on the E side of Little Koniuji Island, is about 1 mile wide at the entrance and 1.5 miles long. On its W shore are prominent granite cliffs. The cove affords good anchorage in its S bight in about 10 fathoms, sheltered from all but SE weather. Excellent anchorage was reported 1.1 miles 155° from

Entrance Point in sand bottom; this anchorage affords good protection against weather from the SW.

(366) **Atkins Island,** about 1.5 miles long and about 0.6 mile wide, is connected to the NE headland of Little Koniuji Island by a shoal. The island rises to 800 feet at its SE end.

(367) Atkins Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around the entire island. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(368) **Northwest Harbor,** a bight in the N side of Little Koniuji Island, S of Herendeen Island, may be entered from either side. It affords fair anchorage and protection from all but NE winds in 5 to 10 fathoms. The harbor is about 0.5 mile wide. An abandoned fishing station is here.

(369) **Herendeen Island** is triangular shaped, about 0.9 mile long and 0.5 mile wide. An islet is off the W end.

(370) **Northeast Harbor,** the large bay in the W side of Little Koniuji Island, has two bights and is about 4.5 miles long. The SE bight of the harbor is somewhat open to W winds and the holding ground is rocky and poor. The extreme SE end of the harbor is more protected and is a favorite refuge for fishermen, though the bottom, being alternately patches of rock and sand, is not good holding ground. At the head of a small well-protected boat harbor are several houses.

(371) **Chernabura Island,** the most S of the Shumagins, is high and mountainous, and has few breaks in its profile, the highest part being at the E end. A rocky islet, apparently connected with the main island by a bar, is off its N end. On the E side are three small bays; the middle one is reported to afford anchorage in W winds.

(372) The S shore of Chernabura Island is a Steller sea lion rookery site. There is a 3-mile vessel exclusionary buffer zone around this rookery which encompasses all but the NW portion of the island. (See **50 CFR 223.202),** chapter 2, for limits and regulations.)

(373) **Bird Island,** about 4 miles W of Chernabura Island, is more irregular than that island, but several of its peaks are nearly as high. Passing well S, Bird Island appears as four principal peaks connected by low valleys. Almost its entire SE side is a series of cliffs. A rock is a short distance off its S end.

(374) An anchorage is reported in the bight on the E side of Bird Island, just inside **Point Welcome,** in 5 to 12 fathoms. The wreck of a schooner is at the head of the bight. Temporary anchorage, exposed to all but winds from the SE quadrant, may be had in the bight in the NW side of the island in about 12 fathoms, sand bottom, SW of the reef making out about 1 mile in a NW direction off the NW point of the island. Rocks are 0.5 mile offshore in a W direction from the S point of this bight, and a shoal about 1 mile in a NW direction off the SW point of the island. Submerged rocks are found about 0.5 mile off the N shore of the large bight on the E side of the island.

(375) **Otter Strait,** between Bird and Chernabura Islands, is said to have depths between 20 to 35 fathoms, sandy bottom.

(376) **Big Koniuji Island,** the N and largest of the E group of the Shumagin Islands, is about 13 miles long and about 7.5 miles wide at its widest or S end. The island is rugged and very mountainous, with a well-defined central ridge and spurs projecting toward the points. The coast is broken by many inlets and the points are rockbound close inshore. The highest peaks are frequently mist covered. **Cape Thompson,** its N point, is comparatively low, and its SW end terminates in a long narrow point with a high connecting ridge that resembles an island from some points of view.

(377) **Flying Eagle Harbor,** on the E side of the island, 6 miles S of Cape Thompson, offers well-protected anchorage for small vessels, especially in S gales, in 7 to 10 fathoms.

(378) **Hall Island,** about 0.9 mile long and 0.2 mile wide, is about 1 mile off the E shore of Big Koniuji Island. Two bare rocks are close to the SE face of the E end of the island, and a reef extends about 0.3 mile SW from the SW point.

(379) **Murre Rocks** are a group of three islets about 0.6 mile NW from Hall Island. A rocky ledge extends about 0.3 mile SW from the S islet.

(380) **Yukon Harbor**is SW of Hall Island. A rocky ledge covered with kelp is close around the E entrance point, and rocks are close to the W point. Anchorage, protected from W weather, may be had in the center of the harbor in about 7 fathoms, but the holding ground is poor.

(381) **Koniuji Strait,** between Big and Little Koniuji Islands, is about 1.5 miles wide, and has reported depths of 16 to 28 fathoms.

(382) **Charts 16556, 16540.**–Four prominent bights are on the W side of Big Koniuji Island. They are open and easy of access and their shores are clear, except close-to. Anchorage in 24 to 26 fathoms may be had near the head of the bight 146° from Peninsula Island which is 3.5 miles NNE from Spectacle Island. In approaching the anchorage it is necessary to keep N of midchannel to avoid a shoal extending 300 yards off the S shore about 0.5 mile from the head of the bight.

(383) The other bights do not offer anchorage because of the great depth of water. Anchorage for very small craft may be found in any of these bights, close inshore, and in the numerous indentations and small coves. The winds draw through the divides into the bights, and the williwaws are very strong.

(384) Two bays indent the S coast of Big Koniuji Island; the reported depth in the W one is too great for anchorage, but in the easterly large bay, vessels have anchored in 16 fathoms, poor holding ground of hard bottom, with protection from N and W winds.

(385) A 3-fathom shoal extends from the S end of Big Koniuji Island.

(386) **Castle Rock,** about 1.5 miles NNE of Cape Thompson, the N point of Big Koniuji Island, is rugged and serrated, and its highest peak is 825 feet. It makes an excellent landmark. A 3-fathom shoal extends about 0.8 mile off its S end.

(387) The bottom between Big Koniuji Island and Castle Rock is said to be even, averaging 28 fathoms.

(388) **East Nagai Strait** separates Nagai Island and Big Koniuji Island of the Shumagin group, and has an average width of 6 miles and a minimum width of 1.6 miles. Peninsula, Spectacle, Bendel, and Turner Islands are in a general NNE-SSW direction in this passage, and the waters between this chain of islands and Nagai Island on one side and Big Koniuji Island on the other are deep and clear, and midchannel courses may be safely steered.

(389) **Peninsula Island,** 3.5 miles NNE from Spectacle Island and the most N island in East Nagai Strait, is 1.5 miles long and 0.8 mile wide. It has a central peak 1,145 feet high. The shore is rugged, steep, and rockbound. A long boulder spit extends off the SE end. The NE end should not be approached closer than 0.3 mile and the SE end no closer than 0.5 mile. Exposed anchorage

may be found on the tail of the shoal extending off the SE point in 5½ to 12 fathoms, 0.5 mile from the narrow point.

(390) **Spectacle Island,** 2.5 miles long and 1.5 miles wide at its S part, is rockbound and has steep cliffs on the N, E, and S sides. The N part is distinguished by two peaks over 900 feet high and the S part reaches 1,252 feet. In general, the island may be approached within 0.2 mile.

(391) Anchorages, under favorable conditions, for small craft are in the large bight on the E side of Spectacle Island in 6 to 9 fathoms, in the bight on the W side in 4 to 5 fathoms, and in the small cove in the S side in 3 fathoms. The bights on the E and W sides are open and easy of access. The entrance to the small cove on the S side is about 70 yards across with foul ground on either side to a point about 0.1 mile inside the entrance.

(392) The passage between Peninsula and Spectacle Islands is about 3.5 miles wide and is deep and free from dangers.

(393) **Bendel Island,** SW of Spectacle Island, is separated from it by a passage 0.6 mile wide. It is about 2 miles in diameter and 1,250 feet high. The E end terminates in a narrow neck. There are high bluffs on the S side and sloping valleys on the others. The coastline is rocky, with kelp, and the depths around the island are irregular. A flat extends off the SW side for about 1 mile with depths of 4¼ to 10 fathoms and with several shoaler spots. Depths of 7 to 8 fathoms are also found off the NW and SE sides. Exposed anchorages for small boats may be found in the bights and on the flats.

(394) The passage between Spectacle and Bendel Islands is 0.6 mile wide, and a midchannel course leads through 21 to 11 fathoms.

(395) **Turner Island,** 1,207 feet high, is separated from Bendel Island by a passage from 0.8 to 1.5 miles wide. The island is 2.8 miles long and about 0.9 mile wide. Its shore is rockbound and the SE coast is very foul for about 0.5 mile offshore. There is a low flat on the NW end with a 400-foot knoll on the point. The bluffs on the N, SE, and S sides are 400 to 800 feet high.

(396) The passage between Bendel and Turner Islands is deep at both entrances and shoals gradually to 4¼ fathoms in its narrowest part, about midchannel off the SW point of Bendel Island. Dense kelp grows on this shoal and small craft find difficulty in passing through. This passage is not recommended for large vessels.

(397) The **Twins,** about 4 miles S of Turner Island, consist of three small islands with precipitous and bare sides; the highest, 410 feet, is also the largest of the group. Three small islets and another small islet are off the SW side and SE end, respectively, of the largest island, and a small islet and a larger islet are off the SE side and SW side, respectively, of the most S island. Several rocks awash extend SE from near the NW end of the most W island to near the NW end of the S island.

(398) **Near Island,** in the S approach to East Nagai Strait near Nagai Island, is about 1.4 miles long and 1,289 feet high, with precipitous, rocky sides. The island is easily recognized by a regular serration that cuts its crest into five little peaks. There are rocks close to the shore.

(399) **Charts 16540, 16553, 16556.–Nagai Island,** in the center of the Shumagin group, is about 29 miles long, 9 miles wide, and near the center reaches an elevation of 1,837 feet in a group of confused ridges. Its coast is irregular and indented by numerous inlets, several of which extend nearly through the island and have low, narrow isthmuses at the head. The island is mountainous and its shores are rockbound.

(400) **Cape Wedge,** the N end of the island, is a pointed headland with a rounded, sloping hill, 762 feet high. The N end of the cape terminates in a double point, 262 and 316 feet high and a rocky bluff 150 feet high between. Its shores are rocky and forbidding, and dangers are within 0.3 mile of the shore. Clear the cape by at least 1 mile.

(401) **Mountain Point,** the S end of Nagai Island, is narrow, about 500 feet high, and surrounded by rocks at a distance of about 0.5 mile. A covered rock is about 1 mile SSW off the point.

(402) **Pirate Shake** is a local name for the low, 65-yard-wide neck of Nagai Island, 4 miles SSW of Cape Wedge. The cove on the E side of the neck is a good anchorage but is exposed to winds from about ENE to ESE. The outer points at the entrance are surrounded by reefs, and a rock, 8 feet high, is in the middle of the entrance. The better entrance is N of the rock, heading for an islet, 40 feet high, on the N side of the cove, on a **286°** course. Pass 300 to 500 yards S of the islet, and anchor in the middle of the cove WSW of the islet in about 7 fathoms, soft bottom in places. Anchorage can also be selected in the entrance of the cove just NE of the islet in 7 to 8 fathoms, bottom generally rocky, taking care, however, to avoid the reef that extends about 0.2 mile from the NE shore of the cove. The flat islet, 40 feet high on the N side of the cove, and a rock, 25 feet high, off the outer point on the S side of the cove are good marks for the entrance.

(403) **Northeast Bight,** on the E side of Nagai Island, about 6 miles S of Cape Wedge, is 1.3 miles wide, open, deep, and free from dangers except close to shore. The main body of the bight is too deep for anchorage, but a vessel may anchor in the two coves at the head in about 20 fathoms.

(404) **Chart 16540.–Mist Harbor,** a landlocked basin about 1 mile long and 0.4 mile wide, is on the E side of Nagai Island, 10 miles S of Cape Wedge, and NW from Bendel Island. The depths in the middle of the basin are 27 to 35 fathoms, but small craft can find secure anchorage in the cove on the S side of the W end of the harbor, in 6 to 7 fathoms. The S side of the harbor is formed by a long spit; the 200-yard-wide entrance is around the W end of the spit and necessitates a sharp turn in entering. A midchannel course should be followed through the entrance, and also when entering the cove at the W end of the harbor to the anchorage. A flat fills the E end of the harbor; otherwise there are no dangers away from the shores.

(405) A fishing camp is usually on the cove at the W end of Mist Harbor and small temporary wharves may be found. Water may be had from small streams on the NE side of the harbor. Strong williwaws draw down from the high mountains at times. A low neck of land, about 150 yards wide, separates the W end of the harbor from the head of Northeast Bight.

(406) **East Bight** on the E coast of Nagai Island, 3 miles SW of the entrance to Mist Harbor, is about 3.2 miles long and 2 miles wide. It is deep, open to the SE, and the shores are clear except close-to. Anchorage for moderate-sized vessels may be found on the shelf on the NE side in 15 to 20 fathoms, about 1 mile inside the N entrance point and about 0.4 mile offshore.

(407) The two W arms do not afford good anchorage because of the depth, about 29 fathoms. A 7-fathom spot, surrounded by deep water, is in the N of the two arms, 650 yards off the W shore and about 0.9 mile from the head of the arm.

(408) The entrance to the more S of the W arms is restricted to about 450 yards by a shoal that extends 900 yards N off its S entrance point. In entering, favor the N shore at a distance of 0.1 to 0.2 mile. Small boats may find protected anchorage behind the hook at the S entrance point in 9 to 15 fathoms. After passing well through the entrance to the arm, head **180°** to pass about 100 yards W of the W end of the hook spit. When abreast of the end of the hook, round into the cove and select anchorage in about its center.

(409) **Larsen Bay,** on the E side of Nagai Island opposite Turner Island, affords good anchorage in 4 to 10 fathoms, sandy bottom. The bight is open and easy of access but is exposed to E winds. The W shore is low and is distinguished by white sand dunes. A bold headland, about 100 feet high, projects from the S side. There are several open bights on the E coast of the island between Larsen Bay and Mountain Point.

(410) **John Island,** off the W side of Nagai Island about 7 miles N of Mountain Point, is 580 feet high. S of John Island, Nagai Island consists of two clusters of rocky hills, 1,611 and 1,130 feet high, joined by a low isthmus.

(411) The isthmus is called **Saddlers Mistake**because of a vessel attempting at night to pass between the adjacent high parts of the island.

(412) **Charts 16553, 16540.–Falmouth Harbor,** on the W side of Nagai Island, about 6 miles N of John Island, affords a secure, though limited, anchorage for a small vessel in the basin behind the spit at its head in 7 to 8 fathoms, sandy bottom. The entrance to the basin is not over 300 yards wide, has a depth of 6 fathoms, and has no known dangers. The basin is 0.3 mile wide, and its N side is a broad sandflat that drops suddenly to 4 fathoms.

(413) A reef extends 0.3 mile SW from the S entrance point of Falmouth Harbor; and a rock, bare at low water and marked by a breaker and kelp, is 0.8 mile from that point in the same direction.

(414) The S shore of the harbor is low, rising steeply to the interior hills. **Cape Horn,** a low point, with a rock close off it, is about halfway up the bay on this shore.

(415) The N entrance point rises some 500 feet in a perpendicular cliff. The shore is rocky and bold. A rock, 5 feet high, is 0.3 mile offshore and 1.2 miles NW from this point.

(416) **Wooly Head,** on the W side of Nagai Island between Falmouth and Eagle Harbors, is a promontory, 1,200 feet high; there are rocks 0.2 mile from shore all around its face, some of them awash and others forming towers and pinnacles 50 feet high. A vessel may pass 0.4 mile off in 20 fathoms. Violent williwaws are frequent here.

(417) **Eagle Harbor,** 13.5 miles SSW of Cape Wedge, about 1.2 to 1.5 miles wide, has depths of 15 to 23 fathoms, with no outlying dangers except near the spits that are 1.5 miles from the head of the harbor. In passing between the spits, favor the one on the SW shore. Good anchorage is anywhere in the head of the harbor above the spits in 14 to 18 fathoms, soft bottom. Small craft can anchor in the lagoon behind the N spit in 6 fathoms.

(418) A fishing station with a large warehouse and boat wharf is on the S side of Eagle Harbor 1.3 miles inside the entrance, and a small abandoned fish station and boat wharf are on the N shore 1.8 miles inside the entrance.

(419) **Sanborn Harbor** is on the W side of Nagai Island about 10 miles from Cape Wedge. The pinnacle rock 103 feet high off **East Head,** the N entrance point, and two waterfalls on the W face of the S entrance point, are conspicuous landmarks. The harbor is 5 miles long and has good anchorage at its head. To secure good shelter, a vessel should pass between **Macks Head** and **Granite Point,** and then anchor as desired, avoiding only the shoal upper half of the NE arm. There are no outlying dangers in Sanborn Harbor.

(420) A fishing station is in a small exposed bay on the N side of Sanborn Harbor, 2.3 miles SE of East Head; it has a warehouse and a boat-wharf, dry at low water.

(421) **Caton Cove** is on the N side of Sanborn Harbor, 3.5 miles SE of East Head; there is shelter in **The Kitchen** for light craft back of the sandspit. The channel, close to the spit, until through the narrowest part of the entrance, has a least width of 100 feet and a least depth of 10 feet.

(422) **Porpoise Harbor,** about 3 miles NE of Sanborn Harbor, affords no useful anchorage because of its great depth.

(423) The bight about 2.5 miles NE of Porpoise Harbor has temporary anchorage in 8 to 15 fathoms, giving the shore a berth of over 300 yards. **Porpoise Rocks** are a small cluster 10 feet high, with deep water close-to, 0.8 mile from the N shore in the approach to the bay.

(424) The narrow bight W of Pirate Shake, described previously, affords anchorage for small craft about 0.3 mile inside the entrance and about on the middle line of the cove in 4 to 6 fathoms, rocky bottom. The bight is exposed to W winds and its E half is foul and shoal to the head.

(425) **West Nagai Strait,** between Nagai and Andronica Islands of the Shumagin group, is 3.3 miles wide at its narrowest point between Porpoise Rocks and The Haystacks, with depths from 25 to 40 fathoms and no outlying dangers. A vessel should pass E and S of The Haystacks and on these sides may approach as close as 0.3 mile in 25 fathoms.

(426) The currents in West Nagai Strait set with the wind and reach a velocity of 1.5 to 2 knots in strong winds. Under ordinary conditions the prevailing set of the current is said to be SW in this vicinity.

(427) **The Haystacks** are a formidable appearing group of four islets 265 to 293 feet high, with a broken chain of rocks running through them. Broken ground, on which the least depth found is 9 fathoms, is 1.3 miles SW from the SW bare rocks. A rock called **The Whaleback,** 1 mile W of The Haystacks, is 22 feet high, and 300 yards SSW of it is a covered rock. Temporary anchorage in 20 fathoms or less can be had in the bight E of The Haystacks. A landing can be made on the boulder beach.

(428) The soundings indicate clear passage between Andronica and The Haystacks, between The Whaleback and The Haystacks, and between the N Haystack and the rest of the group, but none of these passages are recommended.

(429) **Andronica Island,** one of the Shumagin group, is W from the N end of Nagai Island. The island, 2 miles wide, 3 miles long, and 1,175 feet high, is bordered by rocks to a distance of 0.2 mile from the shore; vessels should give the shore of the island a berth of 0.5 mile. A flat islet, 22 feet high, extends 0.4 mile off the SE point toward The Haystacks.

(430) **Andronica Island Light** (55°20.7'N., 160°03.7'W.), 115 feet above the water, is shown from a square frame on the NE point of the island. E of the point is a prominent, conical-shaped rock, 280 feet high, that is useful during low visibility in identifying the N point of the island to assure passage through the desired strait. The light is obscured by the rock.

(431) A rock that uncovers 5 feet, 0.4 mile W of the N point and 0.4 mile offshore, is the farthest outlying danger in the approach to Gorman Strait.

(432) A bare rock, 5 feet high, is 0.2 mile off the W point of Andronica Island.

(433) Temporary anchorage may be found 0.5 mile from shore in the bight on the NE side of Andronica, off the sand beach near the N point, in 20 fathoms. Small vessels can anchor closer to shore in this bight, and also in the bight on the SW side of the island; landing can usually be made in one of these bights.

(434) **Gorman Strait** between Andronica and Korovin Islands, is clear if the shores are given a berth of 0.5 mile. Deepest draft vessels should also use caution passing the 7¼-fathom shoal 0.9 mile SE of Cape Devine.

(435) The currents in Gorman Strait set with the wind and reach a velocity of 1.5 to 2 knots in strong winds. Under ordinary conditions the prevailing set of the current is said to be SW in this vicinity.

(436) **Korovin Island** in the N-central part of the Shumagin group, has two summits, separated by low land and marsh extending from Korovin Bay to Grosvold Bay. The E part of this island rises to 1,209 feet, and the W part to 1,808 feet near its S end.

(437) **Cape Devine,** marking the NW side of Gorman Strait, is a gray headland, 885 feet high, joined to the remainder of Korovin Island by a low neck. The shore is fringed with rocks, and a rock awash at low water is 400 yards off the S side of the cape. A pinnacle rock, 65 feet high, is 1.5 miles N of Cape Devine, and a 5¼-fathom shoal is 0.4 mile NE of the pinnacle, off the E side of Korovin Island. A 10-fathom bank extends 0.8 mile S from the cape.

(438) **Korovin Bay,** the W bight on the S side of Korovin Island, affords fair shelter in N weather, but the holding ground is poor. Anchorage may also be had for smaller vessels in the E bight. Both bights are free of danger except for numerous reefs near shore.

(439) **Scotland Point,** the NE end of Korovin Island, is distinguished by the large pyramid-shaped rock 100 yards off the point. A 10-fathom shoal is 1.8 miles NW of the point.

(440) **Grosvold Bay,** 2 miles W of Scotland Point, may be used as an anchorage for small craft. The entrance is foul on both sides but safe in the middle; inside the bay, foul ground is along the shores. The 623-foot peak of the bold rocky headland on the W side of the entrance to the bay and a waterfall W of the headland are prominent.

(441) The bay between Scotland Point and Grosvold Bay is not recommended for anchorage.

(442) **Henderson Island,** 0.2 mile off the W end of Korovin Island, is small and 58 feet high. From W it is hard to distinguish from Korovin Island until close-to. Rocks extend 0.1 mile off the W end of Henderson Island and shoals, covered 8 fathoms and less, extend up to 1 mile around the island, except on the E side where a reef extends to Korovin Island.

(443) **Korovin Strait,** between Korovin and Popof Islands, has a least width of 2 miles and is free of dangers. The bottom is rough with depths of 25 to over 100 fathoms.

(444) **Karpa Island,** 4 miles NE from Korovin Island, is 0.7 mile wide, 1.3 miles long, and 1,373 feet high. The island is grass covered with a smooth profile; a remarkable cliff, 900 feet high, is at the NE point. The island may be ascended only from the SW point; 70 yards off this point is a pinnacle rock, 50 feet high. A reef extends 140 yards off the SE point and a narrow kelp field is along the S and SE sides of the island; otherwise there are no outlying dangers.

(445) **Popof Island,** close E of Unga Island in the Shumagin group, is irregular and rough in shape, with many hills over 1,000 feet high. The highest point, 1,520 feet, is a short distance NE of the center of the island. The shores are generally rocky and steep and have many ledges, covered with kelp, extending 200 to 300 yards offshore.

(446) The N and E shores of Popof Island have no outlying dangers, but the shore should be given a berth of about 0.5 mile. The water is deep and clear between Andronica and Popof Islands. Temporary anchorage may be found 0.3 mile off the N shore of Popof Island anywhere W of Pirate Cove in 10 to 20 fathoms.

(447) **Pirate Cove**, 4.5 miles ENE of East Head, was formerly an important codfishing station but has been abandoned for many years.

(448) **High Island,** 0.4 mile off the NE part of Popof Island, is 0.2 mile in extent and 310 feet high, with its greatest height near its N end. It is grass covered, but has reddish cliffs showing W and grassy slopes on the other side. There are 30 fathoms and more 200 yards from it all around, and the passage between it and Popof Island is clear. The island can be passed fairly close-to, and is a useful mark for making Gorman Strait in thick weather.

(449) **Fox Hole,** on the E side of the N end of Popof Island, is about 1.2 miles long in a SSW direction. It affords well-sheltered anchorage for small vessels in all weather except E and NE. Depths range from 15 fathoms at the entrance to 5¼ fathoms near the edge of the flat which extends 0.3 mile from the head. The harbor has a clear width of about 400 yards; foul ground extends over 100 yards in places from the shores, and a reef extends about 250 yards N from the point on the S side of the entrance of the narrow part of the harbor. The N point of the entrance is a sheer cliff about 150 feet high. The only directions necessary are to keep in midharbor.

(450) **Popof Head,** 970 feet high and connected to the SE part of Popof Island by an isthmus, is a high precipitous headland with a steep talus. Depths of 20 fathoms are within 200 yards of the head, but vessels should give this headland a berth of 0.5 mile, although in fog it might be approached more closely.

(451) Two large bights, with sand beaches, the W one known as **Red Cove** and the E as **Simeon Bight,** are on the S side of Popof Island. Both of the bights furnish anchorage in N weather, in 8 to 10 fathoms, sandy bottom. Landing with keel boats is difficult because of considerable surf and shoal water near the shore. The point separating the bights is a narrow, rocky projection, fringed with foul ground for 300 yards; rocks awash at low water are 600 yards from shore and 0.4 and 0.7 mile W of the point.

(452) **Popof Strait,** between Popof and Unga Islands of the Shumagin group, is constricted in the N part by rocky ledges, but fans out in the S part into a deep and wide passage.

(453) **Egg Island,** in the middle of the S part of Popof Strait, is small, 165 feet high, and grassy on top. **Little Egg Island,** close W, is 25 feet high and grass topped. There are some detached rocks about the islands; vessels should not approach closer than 0.3 mile.

(454) **Sand Point,** at the W end of Popof Island, is a flat 0.4-mile-long sandspit that marks a turning point to the narrow N part of Popof Strait. Its S shore is fringed close-to by rocky ledges and its N shore has sandy bottom. A shoal shelves off about 150 yards W from the point and then drops off abruptly to deep water; clear the point by 0.3 mile.

(455) **Range Island,** in the N part of Popof Strait, is small and 30 feet high. Foul ground surrounds the island; vessels should not pass between it and Popof Island. **Popof Strait Entrance Light 1** (55°21.3'N., 160°30.3'W.), 50 feet above the water, is shown from a skeleton tower with a square green daymark on the N end of Range Island.

(456) **East Head,** on the E side of the N entrance to Popof Strait, has foul ground and kelp for 0.3 mile off its W side extending SW to Range Island. The radio towers 0.3 mile S of the point are prominent from E.

(457) **West Head,** a projecting point of Unga Island on the W side of the N entrance to Popof Strait, is a 40-foot-high black cliff; 0.5 mile S of it are cliffs 300 feet high. The land W of the head is higher but is broken by numerous valleys. A depth of 10 fathoms is 300 yards off West Head, but as Popof Strait is approached a rocky shoal of 3¼ fathoms is 0.4 mile offshore.

(458) A depth of 6 fathoms can be taken through the narrow channel, marked by lights and buoys, in the N part of Popof Strait, thence depths of 20 to over 80 fathoms through the open passage E of Egg Island in the S part.

(459) In addition to the dangerous reefs in the N part of Popof Strait, marked by buoys, the following dangers must be avoided: a 5-fathom rocky shoal 4 miles SSE of Egg Island and 0.5 mile off the Unga Island shore; a 1¼-fathom pinnacle rock 3 miles SE of Egg Island; a 5¾-fathom spot 0.5 mile 013° from Sand Point; **Caton Shoal,** 0.6 mile N of Sand Point, with a 3-fathom spot; **Unga Reef,** 0.8 mile N of Sand Point, with 1¾-fathom spots; and reefs covered 2¾ and 3¼ fathoms on both sides of the N entrance to Popof Strait.

(460) The current velocity is about 0.5 knot in the N part of Popof Strait and sets N on the flood and S on the ebb. (See Tidal Current Tables for predictions.)

(461) **Humboldt Harbor,** on the E side of Popof Strait 1.3 miles NE of Sand Point, is an excellent shelter with good holding ground. Sometimes a second anchor is needed to prevent dragging during strong SW winds. Vessels can anchor in 10 fathoms 0.3 mile offshore with Humboldt Harbor Breakwater Light 2 bearing 105° and Popof Strait Entrance Light 1 bearing 005°.

(462) A small-boat basin, protected by breakwaters, is in Humboldt Harbor. The S breakwater is marked by two lights; the N breakwater is marked at the S end by a light. In July 1998, the controlling depth in the entrance and harbor basin channels was 16 feet except for lesser depths to 11 feet near the head of channel along the SE side. In July 1998, except for lesser depths along the sides, depths in the basin were generally between 15 to 18 feet. The basin provides moorage for 230 craft. The **harbormaster** assigns berths. The harbormaster's office monitors VHF-FM channel 6.

(463) **Sand Point,** on the N side of Humboldt Harbor, is a fishing port. The westernmost wharf at the village is owned by the Trident Seafood Company. The wharf has a 300-foot face with 20 feet alongside. A machine shop at the plant can make minor repairs to vessels. The oil wharf, the easternmost and smaller of the two, has a 60-foot face with 15 feet alongside.

(464) The freight dock, known locally as the ferry dock, is located at the end of the S breakwater of the small boat basin and has a 200-foot face with 20 feet alongside. Dolphins lie 80 feet off each end for mooring large vessels. This pier is used by the Alaska State Ferry and is operated by the Harbormaster, who can be reached via VHF-FM radio or phone at 907-383-2331.

(465) **Quarantine, customs, immigration, and agricultural quarantine.**–(See chapter 3, Vessel Arrival Inspections, and appendix for addresses.)

(466) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.)

(467) Gasoline, diesel, water, and maritime supplies are readily available. A travel-lift is available in the small boat basin.

(468) The Alaska State Ferry System has monthly service available during the summer months. Air service is available 6 times weekly to Anchorage. The municipal airport and two wharves are located on the N side of the spit at Sand Point.

(469) The easternmost pier is owned by Peter Pan Seafood; 200-foot face with 20 feet alongside. The western pier, owned by Trident Seafoods, is in poor condition and inaccessible to vehicles.

(470) **Pilotage, Humboldt Harbor**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(471) The Alaska Peninsula is served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(472) Vessels using Southwest Alaska Pilots Association pilots and en route to ports in Popof Strait can meet the pilot boat about 2.5 miles S of Popof Head (55°14.7'N., 160°20.0'W.).

(473) The pilot boat can be contacted by calling "SQUAW HARBOR PILOT BOAT" or "HUMBOLDT HARBOR PILOT BOAT" or "SAND POINT HARBOR PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(474) **Charts 16540, 16553, 16551.–Unga Island,** the largest and most important of the Shumagin group, has several large indentations, among which are Baralof Bay and Delarof Harbor on the E side and Zachary Bay on the N. It is quite mountainous, especially the E half. The W half is comparatively low, that part W of Zachary Bay having somewhat rolling topography. The highest mountains are just SE of Zachary Bay, a 2,270-foot peak being the highest. In general, the shoreline is rocky and precipitous. The S and W coasts are particularly foul. Near the W end of the N shore is a 3-mile-long sand beach with sand dunes immediately behind.

(475) The E coast of Unga Island should be cleared by 1 mile to avoid the several offshore dangers, particularly the 5-fathom shoal 0.5 mile offshore and the 1-fathom rock 0.4 mile offshore between Baralof Bay and Delarof Harbor.

(476) N of Baralof Bay the shore is mostly foul. A few settlers live along the coast. A fishing station is in the bight W of **Hardscratch Point,** 3.3 miles S of Sand Point.

(477) **Baralof Bay,** 5 miles S of Sand Point, is a good anchorage except in heavy E weather. **Baralof Bay Light** (55°14.5'N., 160°32.0'W.), 60 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the N entrance point.

(478) Favor the N side in entering Baralof Bay and anchor in the middle in 16 to 18 fathoms, sticky bottom. Small vessels can anchor nearer the head in not less than 6 fathoms; fair holding ground. A small rocky area, covered 3 fathoms and surrounded by sandy bottom, is in the middle 0.5 mile from the head of the bay. A sandy shoal extends 0.3 mile off the S side of the bay entrance.

(479) An abandoned cannery is at **Squaw Harbor** on the N side of Baralof Bay, about 0.5 mile inside the entrance. The cannery does not open up until nearly abreast of it. The cannery wharf has a 190-foot face with 27 feet alongside. A caretaker maintains the site year-round and a processing vessel is sometimes found at the wharf.

(480) Water is sometimes available during the summer months. Radiotelephone service is maintained.

(481) A trail leads overland to Unga from across the bay.

(482) **Kelly Rock,** 3 miles SE of Baralof Bay, is a small, flat-topped, grassy islet 65 feet high 200 yards offshore; kelp grows between the rock and the shore.

(483) **Delarof Harbor,** 9 miles S of Sand Point, is only sheltered during NW weather and the holding ground is poor. The harbor is not recommended as an anchorage. Depths decrease from 15 fathoms in the entrance to 5 fathoms about 300 yards from the inner harbor entrance; it is not safe to anchor in less than about 6 fathoms.

(484) Rocks and islets obstruct the entrance to Delarof Harbor. **Halfway Rock,** 0.2 mile offshore on the N side, is 70 feet high. **Cross Island,** 0.8 mile W of Halfway Rock, is 265 feet high; a 1¾-fathom shoal extends over 100 yards SSE of the island. **Elephant Rock,** the S entrance point, is a narrow projecting rocky mass 155 feet high. The base of the rock has been hollowed out by sea action and from N resembles an elephant. A reef extends N for 300 yards from the point to a rock, 40 feet high. Dangerous **Blind Breaker,** 0.4 mile NE of Elephant Rock, uncovers at extreme low water; depths of 10 to 14 fathoms surround the rock. The W part of the outer harbor has depths of 3¼ fathoms and less.

(485) A 2¾-fathom, narrow, constricted passage, leads from the outer harbor to the shoal inner harbor that has depths of less than 1 fathom. A large reef on the S side of the entrance to the inner harbor uncovers at extreme low water. **Flagstaff Hill,** on the N side of the narrow passage, is a rounded 81-foot-high point surmounted by a flagpole. An island is close SW of the point.

(486) **Unga,** back of Flagstaff Hill, consists of a fishing station, several stores, a school, church, and several houses. It is the center of a codfishing industry. The anchorage off Unga is not recommended except under most favorable weather conditions.

(487) The wharf at Unga is suitable only for small craft at high tide; cargo is lightered ashore from the outer harbor. A ledge, that uncovers, extends 400 yards S from the wharf.

(488) The S coast of Unga Island should be approached with caution. There is no shelter or protection, and often a SE storm comes on suddenly, making it a bad lee shore. It is a poor landfall when approaching from seaward in unfavorable weather, and the currents cannot be foretold. Dangers along the S coast are within 0.5 mile of the shore.

(489) **Unga Cape,** the SE point of Unga Island, is a bare, gray, rugged cliff 855 feet high. A wall-like slab of rock 500 feet high, connected to the cape by a narrow bar, is just S of the cliff and perpendicular to it. At the foot of the cliff are ledges. A vessel may pass 0.5 mile off in 25 fathoms.

(490) **Sealion Rocks,** 3 miles SSE of Unga Cape, are 0.2 mile in extent, 130 feet high, flat topped and grassy. A breaker extends 0.4 mile NE of them. A vessel may pass 0.5 mile off in 26 to 32 fathoms but should give them a greater berth. Between Sealion Rocks and Unga Cape is a clear width of 2.5 miles, with depths from 20 to 30 fathoms and no outlying dangers.

(491) **Acheredin Bay,** a large open bight in the S shore of Unga Island, is 3 miles across and 2 miles in depth. Its shore is a sand and pebble beach, behind which is a lake 7 feet above high water. A vessel may approach to 0.6 mile off the sand beach in 8 fathoms. Anchorage is satisfactory only in N weather.

(492) **Acheredin Point,** the SW end of Unga Island, is a black mountain 1,402 feet high with an exceedingly rough surface and serrated profile. At the end of the point is a separate hill 500 feet high. The 20-fathom curve is within 0.3 mile of the S end of the point. There are numerous rocks and pinnacles around the point, particularly along the SE and E shores; the most prominent is 50 feet high and about 0.7 mile E of the point. A sharp pinnacle also forms the S tip of the point.

(493) **Sombrero Point** is the first prominent headland 5.5 miles N of Acheredin Point. The 1,071-foot peak on the headland resembles a sombrero from most directions to seaward. The waters fringing the point are mostly foul for 600 yards offshore.

(494) **Bay Point,** 12.2 miles N of Acheredin Point, is a rounded rocky headland 315 feet high; it is a good landmark all around and shows over the land in Unga Strait. The low sandy neck that joins the point to the mainland encloses a shallow lagoon that can be entered from N. The sea bottom is steep-to W of Bay Point; the 10-fathom curve is less than 200 yards from shore. Anchorage, with satisfactory protection from E weather, is available in 7 to 19 fathoms N and NW of Bay Point and 10 to 15 fathoms in the large open bight S of the point. Foul areas extend 0.5 to 0.8 mile off the W shore of Unga Island N of Bay Point.

(495) The 16-mile-wide area between Unga Island and Wosnesenski Island is full of broken ground and islets. **Kennoys Island,** 10 miles W by N of Acheredin Point, consists of several small islets. **Jude Island,** 13 miles NW of Acheredin Point, is 150 feet high and less than 0.3 mile across. It is rounded, grassy on top, and rocky at the shore. **Omega Island,** 5 miles W by S of Jude Island, is 90 feet high.

(496) Pinnacle rocks, covered 3 to 8 fathoms, extend as much as 3.5 miles off Sombrero Point. A rock, covered 2 feet that breaks in moderate swell, is 2.3 miles ENE of Jude Island; a ridge with several 3- to 10-fathoms spots extends about 2 miles NNE and SSW of the rock. The area W of a line between Kennoys Island and Jude Island to Wosnesenski Island has many rocks covered 1 to 10 fathoms. A rock awash is 1.4 miles W of Omega Island.

(497) **Unga Spit Light** (55°24.4'N., 160°43.8'W.), 40 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark at the N end of Unga Island. Depths of 10 fathoms or more are 0.3 mile N of the spit, but depths of less than 10 fathoms extend over 1.5 miles E and W of the spit. Temporary anchorage can be had W of Unga Spit during favorable weather.

(498) **Gull Island,** 3 miles E of Unga Spit, is a flat-topped, grassy islet 37 feet high and 80 yards across with deep water within 200 yards.

(499) **Zachary Bay,** on the N side of Unga Island, is open and easily entered. Anchorage is available in the outer part of the bay in 10 to 20 fathoms, sticky bottom, but the area is exposed to N and NE winds.

(500) Dangers extend off both shores at the entrance to Zachary Bay. A kelp-marked ledge that uncovers, extends 0.6 mile NE from the W side. **Weedy Shoals,** two small reefs 0.2 mile off the E shore halfway from the entrance to **North Head,** show well at low water. The lower part of the bay is constricted by shoals extending from both sides; the head of the bay is shoal.

(501) A better anchorage in Zachary Bay is 0.5 to 1 mile SW of **Round Island** in 6 to 12 fathoms, sticky bottom. The narrow

channel to the anchorage passes 500 yards W of North Head and 200 yards W of Round Island.

(502) **Coal Harbor** indents the E shore of Zachary Bay and is the best anchorage for small vessels. Anchor in about 6 fathoms 0.5 mile SE of Round Island, sticky bottom. Enter in midchannel N of Round Island, then follow the shore at a distance of 300 yards. Avoid the sandspit, covered 1 foot, that extends 0.3 mile SE from Round Island. The head of the harbor is shoal.

(503) **Chart 16551.–Beaver Bay,** across Unga Strait from Unga Island and W of Cape Aliaksin, is open to the S but is free of offshore dangers. An exposed anchorage is in the upper part of the bay in 5 to 25 fathoms; there is little protection from the N winds that tend to draw down over the mountains and through the valleys into the bay with intensified force. Dangers are within 0.4 mile of the E shore and 1 mile of the W shore of the bay; the head of the bay shoals gradually.

(504) Foul ground with considerable kelp is within the 10-fathom curve that extends from 0.4 to 2.5 miles offshore between Beaver Bay and Pavlof Bay; relatively shallow water is along the shore. A shoal spot, covered 7¼ fathoms, is 2.5 miles SE by S of Seal Cape Light.

(505) **Seal Cape Light** (55°21.9'N., 161°15.3'W.), 75 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on a small island 3 miles E of **Seal Cape.** A hog-backed mountain is 0.8 mile NE of the light. A rock, covered 1½ fathoms, is 0.6 mile offshore 0.8 mile E of the light; a ledge and broken ground extend to the shore.

(506) **Seal Cape** has a flat-topped mound 100 feet high at the outer end, and is joined to the mainland by a low neck of land; it is difficult to recognize. **Moses Rock,** 3 miles W of Seal Cape Light, are two breakers 0.3 mile apart. A 10-fathom depth, irregular bottom, was found 1.2 miles S of Seal Cape; the area was not developed by further soundings.

(507) **Coal Bay,** W of Seal Cape, is a good shelter for small vessels in NE weather. However, only a small part of the bay has been surveyed; vessels should not enter without local knowledge.

(508) **Cape Tolstoi,** 8 miles W of Seal Cape Light at the E entrance to Pavlof Bay, is high and bold with eroded bluffs from 200 to 600 feet high. The cape is marked by two peaks that are separated by a deep, narrow valley. Two prominent pinnacle rocks abut the W face of the cape. The shore around the cape is foul, but depths of 10 fathoms or more are within 0.5 mile of the cape. A small, flat, 20-foot-high, rocky island along the outside coast, 1 mile E of the cape, connects with the mainland at low water by a reef awash.

(509) **Pavlof Bay,** on the SE coast of the Alaska Peninsula 25 miles W of Unga Island, is open but leads to Canoe Bay, a landlocked arm. Several cabins along the shores are occupied by fur trappers during the winter.

(510) Dangerous rocks and small islands are in the entrance to Pavlof Bay. The E shore is bold and strewn with rocks and reefs; the interior is mountainous. The N shore consists of reddish eroded bluffs 30 to 70 feet high giving way to a sand and ash beach near the entrance to Canoe Bay. The W shore is comparatively low with rolling grassland in the interior.

(511) NW winds sweep out of Pavlof Bay with great force in the early spring and fall. The prevailing winds in summer are SE to SW, and they draw up the bay with considerable force causing at times a heavy sea in the upper part of the bay. Fog is more prevalent in the entrance than in the upper part of the bay.

(512) In N weather, anchorage may be selected at any place in the N part of Pavlof Bay. The bottom consists of mud and ashes, and has good holding qualities. In SE weather, good protection may be had just NW of Cape Tolstoi in 15 fathoms, sticky mud bottom. In W weather, anchorage may be found near the W shore about 2 miles S of Ivan Island.

(513) **Flat Island,** in midentrance to Pavlof Bay, is 62 feet high, flat topped, and has precipitous shores. A detached reef that uncovers, extends 0.5 mile S of the island. Detached reefs extend 0.3 mile N and 0.2 mile W of it, but the E side is clear with deep water 0.3 mile off the island. Irregular bottom, covered 11 to over 20 fathoms, extends 3 miles S from Flat Island. Although volcanic ash bottom is indicated, the banks are probably of rock structure and may have less water over them; vessels are cautioned to avoid the area.

(514) **Black Rock,** 1.3 miles off the W entrance shore 4 miles SW of Flat Island, is 15 feet high and surrounded by deep water.

(515) **Lump Island,** 1 mile NNW of Flat Island, is 45 feet high, small, and rocky. A 20-foot-high detached rock is connected to the S side of the island by a reef that uncovers. A rock that uncovers is 300 yards N of Lump Island.

(516) A dangerous shoal, covered 7 feet, is 0.7 mile E of Lump Island. Kelp marking the shoal may be drawn under by strong tidal currents.

(517) **Black Point,** forming the W entrance to Pavlof Bay W of Lump Island, is low and indefinite; it is composed of black cinders and ashes.

(518) **Settlement Point,** 7.5 miles N of Cape Tolstoi, is a low narrow tableland. The 208-foot-high hill just back of the point is prominent. Shelter for small craft may be had on either side of the point in all except SW winds. A dangerous reef that uncovers about 4 feet is 0.2 mile S of the point. A 2¾-fathom patch is 1.2 miles N of the point.

(519) **Gull Island,** 4.5 miles W of Settlement Point, is a bird rookery; a reef extends 0.2 mile W of the island.

(520) A bank between Settlement Point and Gull Island has a least surveyed depth of 12 fathoms; because of the irregular bottom, there may be lesser depths.

(521) **Ivan Island,** 1.5 miles NW of Gull Island, is the largest in Pavlof Bay. It is 200 feet high and flat topped with vertical cliffs rising abruptly from the water. On the E side is a shallow basin for launches; about 6 feet can be carried through the two entrances at high water. Shoal water with scattered kelp is between Ivan Island and the mainland.

(522) **Round Island,** over 2 miles NE of Ivan Island, is 90 feet high, small, and round topped. Two 25-foot-high rocky islets are NE of the island.

(523) There is considerable foul ground with depths less than 1 fathom extending as much as 2 miles from the W shore of Pavlof Bay from Gull Island to and including the N side.

(524) **Canoe Bay** joins Pavlof Bay at the NE end by a 175-yard-wide channel between 50-foot-high rocky entrance points. The controlling depth is 23 feet between deep water in both bays, but care is necessary to avoid several shoal spots of less than 3 fathoms and a 1¼-fathom rock 0.7 mile E of the S entrance point. The current velocity is estimated at 5 to 7 knots in the entrance; slack water occurs at about the time of high and low water in Canoe Bay.

(525) A mountainous ridge that culminates in a remarkable volcano with an extinct circular-shaped crater borders the N side of

Canoe Bay. **Cone Peak,** on the S side of Canoe Bay, is 1,280 feet high and prominent from Pavlof Bay.

(526) NW winds do not blow strongly in Canoe Bay, but it is reported that NE winds of winter sweep down the bay with great violence.

(527) Anchorage in Canoe Bay may be selected just inside the entrance in 4 to 10 fathoms, hard bottom, or in the E part in 23 fathoms, sticky bottom.

(528) **Chart 16549.**–On the S side of Alaska Peninsula from Pavlof Bay to Arch Point is a long, low, sandy beach. The ground back of the beach rises gradually to the three peaks of Pavlof Volcano.

(529) **Arch Point,** at the N entrance to Volcano Bay, is moderately low with cliffs about 100 feet high; it is joined by a low neck to the high land farther back. The cliffs are undercut in several places forming caves and arches. The rock is black near the water, changing to light brown above with grassy land back of it. Deep water extends to the S side of the point.

(530) A flat-bottom area makes out from the shore about 6 miles NE from Arch Point, affording good anchorage in 14 to 15 fathoms on the outer part of the flat area. The anchorage is useful for vessels waiting for the weather to clear before attempting the passage among the islands.

(531) **Arch Point Light 2** (55°12.3'N., 161°54.3'W.), 78 feet above the water, is shown from a skeleton tower with a red triangular daymark on the SE part of the point.

(532) An area of broken ground is between Arch Point and Dolgoi Island. A 1¾-fathom rock, 1.5 miles SE of the light, is marked by a lighted buoy. A 5¾-fathom spot is 0.8 mile NW of the rock and broken ground with a least found depth of 6¼ fathoms extends 0.5 mile ESE from the rock.

(533) **Local magnetic disturbance.**–Differences of as much as 10° from normal variation have been observed near Arch Point.

(534) **Volcano Bay** is free from rocks and shoals, except near the shores which should be given a berth of 0.4 mile. The shoaling is abrupt from about 30 fathoms to the flats at the N side of the bay. Good anchorage and shelter from all except SE winds may be had near its head in 10 fathoms, sticky bottom. Shelter for small craft from SE wind may be had in 2 fathoms behind the sandspit that makes out from the S side of the NW part of the bay. Water may be had here. Rocks and ledges extend 500 to 700 yards offshore between this spit and Bear Bay.

(535) **Bear Bay**is a small inlet that affords fair anchorage in the middle of its entrance. The inner part of the bay can be entered only by pulling boats.

(536) **Charts 16549, 16551.–Pavlof Islands,** consisting of seven, extend for over 15 miles from the Alaska Peninsula coast S of Pavlof Bay. Most of the water area inside the outer perimeter of Wosnesenski, Ukolnoi, Poperechnoi, and Dolgoi Islands has not been surveyed and should be avoided; many covered and uncovered rocks, ledges, and breakers are in the area.

(537) **Wosnesenski Island,** the easternmost of the Pavlof group, has a 1,200-foot, rocky, flat-topped peak near the E side. Most of the shore around the island is foul. Small vessels can anchor in the bight on the N shore or in the small bay with sand bottom on the NE side of the island. Dangerous rocks, covered less than 10 fathoms, extend 3 miles N of the island. A submerged rock, covered ¾ fathom, is 1.2 mile N of the NE end of the island.

(538) **Ukolnoi Island,** 5 miles W of Wosnesenski Island, is high and mountainous; it is steep and bold at the NW point. **Ukolnoi Island Light** (55°14.7'N., 161°39.6'W.), 35 feet above the water, is shown from a square frame with a red and white diamond-shaped daymark on the NW point of the island. The N shore should be cleared by more than 1 mile to avoid the broken ground off the island.

(539) **Poperechnoi Island,** 8 miles SW of Wosnesenski Island, has rugged cliffs 1,200 feet high along its NE shore and a 1,800-foot peak in the N part. Foul ground surrounds the island.

(540) **Dolgoi Island,** 9.7 miles across and grass covered, is divided into two mountain masses by Dolgoi Harbor and the lowland at its head. The greatest height at the E and W ends of the island are 1,450 and 1,510 feet, respectively. The shore is generally abrupt and high. The N point of the island is an overhanging cliff. The S part of the island is particularly bold, the cliffs being several hundred feet high. At the middle of the SE side is a headland with a cliff over 900 feet high.

(541) **Dolgoi Cape,** the S point of Dolgoi Island, is marked by several large detached rocks a few yards off the shoreline.

(542) The area from 5 miles SE of Poperechnoi Island to 5 miles SW of Dolgoi Cape is full of dangerous rocks and islets; extreme caution is necessary.

(543) **Dolgoi Harbor** is well protected and provides excellent shelter from violent williwaws; however, the bottom is volcanic ash with poor holding ground. Two islets are on the W side of the entrance and two larger islands are inside the harbor.

(544) To enter Dolgoi Harbor, steer **020°** for the highest point (500 feet) of the ridge at the head of the harbor showing W of the two islands in the harbor, and pass 200 yards or more E of the outer one of the two islets on the W side of the entrance. Pass W of the first island within the harbor, favoring, if anything, the side nearest this small island.

(545) The deeper passage then leads between the two islands in Dolgoi Harbor, taking care to give the N end of the S island a berth of over 150 yards, and the SE end of the N island a berth of over 300 yards; the best course through is about **109°.** Or, vessels can take the passage W of the upper island, which has a depth of about 4 fathoms, by keeping the island at a distance of about 200 yards. This channel obviates the turn between the two islands, which is somewhat difficult for long ships, especially during SE winds.

(546) Anchorage in Dolgoi Harbor can be selected anywhere above the islands in 7 to 10 fathoms, mud bottom. The best anchorage is reported to be 1.5 miles NNE of the N of the two large islands inside the harbor.

(547) Dolgoi Harbor is easily approached with the aid of the chart, passing on either side of Goloi Island. The principal outlying dangers in the approach are a rock covered 1 foot, marked by kelp, with a 5¼ fathom area nearby, 1 mile W of **Entrance Island,** and a cluster of rocks about 1.5 miles SSE of Entrance Island with a least depth of 1 foot.

(548) **Bluff Point** is a rocky headland forming the NW end of Dolgoi Island. It rises abruptly to 50 feet, with a gentle grassy slope to the E.

(549) **Goloi Island,** within the W limit of the Pavlof group, is 970 feet high and the sides are generally abrupt except at the two sandspits, one at the W end and the other at the middle of the NE side of the island. **Goloi Sandspit Light 3** (55°06.6'N., 161°55.5'W.), 17 feet above the water, is shown from a skeleton

tower with a green square-shaped daymark on the point of the spit.

(550) A sandspit makes out from **Moss Cape** 1 mile NW of Goloi Sandspit Light; a lighted buoy marks the outer limit of the shoal extending SE from the cape. When on S courses approaching the passage between Moss Cape and Goloi Island, use care not to mistake a pinnacle rock, midway of the E shore of Inner Iliasik Island and skylined in the low center of the island, for the light on Goloi Island. Also, use care in passage to avoid foul ground making out from either side.

(551) **Iliasik Islands,** each about 2.7 miles long and 0.7 mile wide, are both high and have cliffs at the water. Viewed from W, they appear as three islands, as **Inner Iliasik Island** is nearly divided by a low neck of land into parts about 800 feet high. The high N end of **Outer Iliasik Island** is also separated by low ground from the rest of the island. Ledges and kelp extend about 200 yards from the E side and about 0.3 mile from the W side and SE end of Inner Iliasik. Outer Iliasik is surrounded by ledges and kelp to a distance of 0.3 mile in places; bare rocks and foul ground extend 0.5 mile WSW from the W end of the island.

(552) **Iliasik Islands Light** (55°02.2'N., 161°56.4'W.), 95 feet above the water, is shown from a square frame with a red and white diamond-shaped daymark on the S end of Inner Iliasik Island. A lighted buoy is 0.3 mile off the NW extremity of Outer Iliasik Island. A house is on the NW slope of the inner island.

(553) Caution should be used in making the passage between the Iliasik Islands because of reefs that make out from each island, constricting the navigable channel to a width of 0.6 mile. Growing kelp has been seen midway between the islands in the middle of the summer.

(554) From the N point of Inner Iliasik Island a reef extends to the mainland. Just E of the mainland end of the reef and close to the shore is a large boulder that is easily recognized. There is little depth on the reef near the island, and about 8 feet on the greater part of it. Near the mainland a depth of 11 to 12 feet can be taken across the reef by passing 100 to 300 yards off the large boulder on a course parallel to the shore. The passage is used by local fishing vessels of about 6 feet or less draft and is not recommended for any but light-draft vessels; the tendency is to cross too far from the large boulder.

(555) **Sarana Island,** 270 feet high, is a rocky island off the S point of Outer Iliasik Island. The island is fringed with reefs and should be avoided. The passage between it and the Outer Iliasik is foul. A reef, bare at low water, is 1 mile E of Sarana Island, and an extensive reef with occasional bare rocky islets extends to the S from the S point of Outer Iliasik Island.

(556) A rock, covered ¼ fathom, is about midway between the S end of Outer Iliasik Island and Deer Island. Vessels should keep well to the N of this rock, as the area to the S is foul.

(557) **Chart 16549.–Belkofski Point** is the first point on the Alaska Peninsula W of the Iliasik Islands. A reef extends 600 yards SW from the point, and the shore for 0.5 mile on either side is fringed by a reef that extends from 100 to 200 yards offshore. Because of the broken and uneven bottom here, the cape should be rounded not less than 0.8 mile.

(558) **Belkofski,** a native settlement on the E side of Belkofski Point, has a prominent church. Vessels anchor off the village in 10 fathoms and land supplies on the sand and boulder beach unless S weather makes the surf too heavy.

(559) The mail steamer from Seward makes regular stops. In the summer the village is nearly deserted because most of the natives work in nearby salmon canneries. Radiotelegraph communication is maintained.

(560) **Belkofski Bay** is deep and free from hidden dangers, except for reefs and ledges near the shore.

(561) **Local Magnetic Disturbance.**–Differences of as much as 5° from the normal variation have been observed on the E coast of Belkofski Bay.

(562) **Kitchen Anchorage,** on the E side of Belkofski Bay, is easy to reach and affords good shelter in all except NW winds. In strong S weather, the williwaws become frequent and violent. The bottom is soft volcanic mud and its holding quality is good. A large stream flows into the head of the harbor. From the N entrance point of Kitchen Anchorage, for 1 mile to the entrance to the outer portion of Captain Harbor, the shore is a steep-to cliff, and may be approached within 200 yards.

(563) **Captain Harbor** is the indentation at the extreme NE end of Belkofski Bay. It extends NE for about 2 miles with an average width of 0.4 mile, and is divided into an outer and inner anchorage by a shingle spit that extends from the W shore. The outer portion is narrowed to a width of 300 to 450 yards between the 3-fathom curves, and the anchorage is in 10 fathoms in the center with the E end of the shingle spit bearing 033° distant 600 yards. The holding ground is poor, of soft volcanic ash over a hard substratum. The N shore of the outer anchorage is a low cliff, with shoal water extending 300 yards offshore in places.

(564) The outer part of the harbor has general depths of 8 to 12 fathoms and 10 fathoms can be carried into it. At the entrance, a slight bar extends off the N side with a shoalest sounding of 7½ fathoms near the middle of the entrance. Depths of 4 to 8 fathoms prevail over most of the inner part and the 3-fathom curve carries practically to the head of the bay, affording good shelter for small boats.

(565) The W entrance is formed by two low sand-and-gravel islets, with flats extending 250 yards to the E and similar flats extending 400 to 600 yards off the 2-mile stretch of beach to the W.

(566) The entrance to the inner basin is about 350 yards wide, with 9 fathoms in midchannel. The inner anchorage, entirely landlocked, is a secure anchorage for small craft in 7 fathoms, mud bottom, with the end of the shingle spit bearing 185° distant about 600 yards. This is the best small-boat harbor along this section.

(567) To enter Captain Harbor, round the prominent point at the S entrance to Kitchen Anchorage at a distance of 0.5 mile, and steer **030°** to a point 250 yards off the SE entrance to Captain Harbor. Then steer **054°** and anchor. To enter the inner harbor, continue on the **054°** course until midway between the end of the shingle spit and the opposite shore; round the spit and steer **003°** for a small stream. Anchor as indicated in previous paragraphs.

(568) **Indian Head** is a very noticeable promontory about 200 feet high, projecting 0.5 mile into Belkofski Bay on its W shore. It is distinguished by several pinnacles near the outer end; a reef extends 250 yards off the point.

(569) The bight N of Indian Head has even bottom, with the 3-fathom curve about 600 yards offshore. Vessels of any size will find excellent shelter from all except S winds in this bight. Anchorage can be had in 10 to 20 fathoms, sticky bottom. In severe N winds, anchorage can usually be found in some section free from the wind. The survey ship found this anchorage by far the best in this section except for S weather, and the Fox Island Anchorage, described later in this chapter, the best for S winds.

(570) **Slavna Point** is the high rocky point on the W side of the entrance to Belkofski Bay, 1.6 miles S of Indian Head. It is steep-to, with depths of 8 fathoms 200 yards off the point.

(571) **Bold Cape** (55°01.1'N., 162°15.4'W.), on the Alaska Peninsula opposite Deer Island, is a rugged headland faced with vertical cliffs, above which the mountain rises in steep rock-strewn slopes. Several prominent boulders stand a few yards offshore.

(572) **King Cove,** W of Bold Cape, reaches inland between high ridges that rise from the shore on either side of the cove. The outer bay is deep and free from dangers except those close to shore. Vessels may anchor in 16 fathoms 0.5 mile off the wharf and about midway between two shores. The anchorage is subject to violent williwaws that are apt to sweep across the bay from all points of the compass, but the holding ground is excellent.

(573) **Morgan Point Light** (55°02.4'N., 162°20.2'W.), 120 feet above the water, is shown from a square frame with a red and white diamond-shaped daymark on the W side of the entrance to King Cove. The shoal areas extending E from Morgan Point and from the W shore inside the cove are rocky and marked by kelp. Near the head and on both sides of the cove a line of piles or dolphins, some marked with private lights, mark the offshore limits of the shoal areas. The bar across the mouth of the cove, 0.5 mile inside Morgan Point, has depths of 11 and 12 fathoms, with sand bottom overlaying a harder stratum.

(574) Anchorage in the outer part of King Cove is in 13 to 15 fathoms, very good holding ground. Anchorage in the deeper upper part is in 16 to 21 fathoms, mud bottom mixed with volcanic ash.

(575) **King Cove** has a wharf and salmon cannery and a deep-water pier. The S and main side of the wharf consists of two faces with a small basin between them. Vessels of considerable size (4,800 gross tons) can moor across the two faces of the wharf. In going alongside either of the S faces of the wharf, vessels should make a starboard landing on the ebb and a port landing on the flood. The ebb sets out of the lagoon at the head in a SE direction with considerable strength, such that a portside landing with an ebb current is almost impossible, whereas a starboard landing should be made easily. It may be necessary to use a bower anchor for going alongside and hauling off with a S wind.

(576) Water, fuel, and marine supplies are readily available. Air service to Anchorage is available 6 times weekly. The Alaska State Ferry System provides monthly service during the summer months.

(577) Construction is scheduled to begin in July 1999 on a breakwater for a second boat harbor, south of the deep water pier. Mariners are advised to use caution.

(578) To enter King Cove, steer for the wharf on a midchannel course. On the ebb, a strong current parallel with the shore sets E along the face of the wharf. This current is caused by the discharge of water from the lagoon.

(579) The deep-water pier is located about 250 yards S of the entrance to the small boat harbor and is marked by private lights. The pier has a 170-foot face with a depth alongside of 30 feet. Dolphins off each end extend the length to 300 feet for mooring larger vessels.

(580) **Pilotage, King Cove**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(581) The Alaska Peninsula is served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(582) Vessels using Southwest Alaska Pilots Association pilots and en route to King Cove can meet the pilot boat about 1 mile SE of Morgan Point Light (55°02.4'N., 162°20.2'W.).

(583) The pilot boat can be contacted by calling "KING COVE PILOT BOAT" on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(584) **King Cove Harbor,** a dredged basin formed by a rounding spit and a dike which extends from the W side at the head of King Cove, is entered from the cove through a dredged channel. In June-July 1998, the controlling depth in the entrance channel was 14 feet with 12 to 15 feet in the basin and alongside the piers. Greater depths were available with local knowledge. The entrance is marked by lights. The **harbormaster** controls the use of the grid and assigns berths. The harbormaster's office monitors VHF-FM channel 6 and channel 16. A 150-ton travel-lift is available.

(585) **King Cove Lagoon** is back of the long spit on which the cannery is located. It is entered through a narrow channel between this spit and King Cove Harbor. The lagoon extends NNE for about 2 miles with depths of 5 to 8 fathoms over most of the area. However, an extensive shoal separates the deep water in the N section from the entrance channel. A fixed bridge with a vertical clearance of 7 feet and a horizontal clearance of 15 feet crosses the entrance channel to the lagoon about 0.2 mile from the E end. The pilings of the bridge are protected by a stone riprap which extends across the channel and uncovers 2½ feet. It has been reported that only skiffs and very small boats pass under the bridge into the lagoon.

(586) Small craft can be beached on the sandspit that forms the N shore of the entrance to the lagoon. The beach slopes evenly and is smooth.

(587) Because of the extensive flats that block the entrance to the upper basin of the lagoon, the plane of low water in that part of the lagoon is about 2 feet higher than the corresponding plane in the cove, and there is a considerable lag in the times of high and low water.

(588) **Deer Island,** near the coast of the Alaska Peninsula W of the Pavlof Islands, is separated from the peninsula by Deer Passage. The passage is a part of the inside route along the Alaska Peninsula. The island has many high conical peaks of about the same height, making it difficult to identify most of them.

(589) **Stag Point,** at the N end of Deer Island, is a short sandspit, except for which the shore is rocky and steep. **Stag Point Light** (54°59.1'N., 162°18.1'W.), 23 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the point. Back of the point is a high sugarloaf peak. The point may be recognized by a steep, high, triangular-shaped bluff at the end of a shoulder of the peak that is conspicuous in the otherwise sloping sides. **West Cape** is a ridge of bare rock that ends in sheer faces at the W extremity and at the two sides. **Fawn Point** is the S cape.

(590) Approaching Deer Island from W, Fox Island shows up low and irregular and is not very distinct until some time after passing Umga Island, distant 14 miles, unless the weather is exceptionally clear. West Cape off Deer Island shows as a flat-topped sugarloaf, appearing as a detached island, but later is recognized as a part of Deer Island, while at the same time Stag Point shows as a high sugarloaf beyond West Cape. S of West Cape are two barren craterlike peaks, that form an excellent landmark.

(591) **Fox Island Light** (54°57.3'N., 162°26.0'W.), 40 feet above the water, is shown from a small house with a red and white diamond-shaped daymark on the NW point of **Fox Island.** Just back of the light is a prominent knob that is separated from the rest of the island by a low neck of land. The SE part of the island is high and nearly flat topped.

(592) Fox Island Anchorage, on the E side of Fox Island, offers good anchorage in 10 to 16 fathoms, soft bottom, well sheltered from the wind and sea from NE to SW.

(593) The passage between Fox Island and Deer Island is clear except for a rock, covered 3 fathoms, about midway between Fox Island and West Cape. In leaving the anchorage through this passage, round the S end of Fox Island at a distance of 400 yards and lay a course W until the lighted whistle buoy about 2.5 miles S of Thin Point bears about 228°, and Fox Island Light about 068°.

(594) A rock, covered 3 fathoms and buoyed, is 1 mile W of West Cape. The SW side of Deer Island is very foul.

(595) E of Deer Island the flood current sets N and the ebb S. N of Fox Island the flood current sets NE and the ebb SW. The tidal currents here are weak.

(596) **Deer Passage,** between Deer Island and Alaska Peninsula, is well marked and a depth of 9 fathoms can be carried through by following the inside route described in chapter 3. Exercise caution to avoid the dangers on both sides of the passage.

(597) **Cold Bay,** indenting the Alaska Peninsula N of Deer Island, is large and can be entered by deep draft vessels. An aerolight is on the W side of the bay.

(598) Mariners should exercise extreme caution when transiting this area in winter as heavy icing may cause floating aids to lie on their sides, submerge, be extinguished or off station.

(599) The village of Cold Bay is on the W side of the bay, and is one of the larger communities along the Alaska Peninsula.

(600) **Pilotage, Cold Bay**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(601) The Alaska Peninsula is served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(602) Vessels using Southwest Alaska Pilots Association pilots and en route to Cold Bay can meet the pilot boat about 3 miles S of Cold Bay Channel Lighted Buoy 1 (55°05.6'N., 162°32.0W).

(603) The pilot boat can be contacted by calling “COLD BAY PILOT BOAT” on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(604) **Vodapoini Point,** at the E entrance to Cold Bay, is low and flat topped with high mountains behind it extending to Lenard Harbor; the shore to Cold Bay is rocky and bold.

(605) **Local Magnetic Disturbance.–**Difference of as much as 14° from the normal variation, has been observed near Vodapoini Point.

(606) Prominent **Bear Rock,** 300 yards offshore and 2 miles NW from Vodapoini Point, is 25 feet high, black, and jagged.

(607) **Kaslokan Point Light 2** (55°06.3'N., 162°31.6'W.), 15 feet above the water, is shown from a square frame with a red triangular daymark on Kaslokan Point on the E side of Cold Bay. **Kelp Point,** 0.7 mile N of the light, is low and rocky.

(608) A reef marked by heavy kelp extends almost across the entrance to Cold Bay near Kaslokan Point. A buoyed 10-fathom natural channel passes through this area near the E shore to deeper water in the bay. The foul area with depths of 2 to 5 fathoms W of the buoyed channel should be avoided. During large tides, the current velocity in the channel may reach 4 knots; with an adverse wind, tide rips make it dangerous for small boats.

(609) The N shore of Cold Bay has many boulders. The W shore consists of low bluffs and sand beaches strewn with boulders, backed by rolling tundra.

(610) **Lenard Harbor,** a small but well-protected harbor formed by an arm of Cold Bay, has anchorage in 16 to 22 fathoms, protected from all seas. The holding bottom is good, but during stormy weather the harbor is subject to the usual williwaws common in this section, and during SE weather the wind may funnel through with terrific force. An extensive reef, awash at ordinary high water, is 0.3 mile off the S shore of Lenard Harbor. This reef constricts the anchorage near its head to an effective width of about 0.4 mile. The water shoals abruptly to the mud flats at its head and to the reef. A fine stream of water flows into Lenard Harbor from its N shore.

(611) **Kinzarof Lagoon,** at the head of Cold Bay, is large and irregular in shape. Although it consists mostly of mudflats, it may be entered at high tide by small launches; with local knowledge such boats may be taken to the cabin on the N shore of the lagoon. Just inside the W entrance is a cabin and a small area of deep water.

(612) **Delta Point Light** (55°11.5'N., 162°38.7'W.), 48 feet above the water, is shown from a skeleton tower with a red and white diamond-shaped daymark on the spit on the W shore of Cold Bay. In SE weather good protection with excellent holding ground may be had behind Delta Point. In N weather, comfortable anchorage may be selected any place in the upper bay with mud bottom and good holding ground.

(613) **Weather, Cold Bay.**–The climate at Cold Bay is basically maritime, because of its nearness to extensive open ocean areas; and temperature extremes, both seasonal and diurnal, are generally confined to fairly narrow limits. Differences between maximum and minimum temperatures for all individual months average less than 10°F (6°C). Although it is practically impossible for cold, continental air masses to reach the Cold Bay area by moving overland along the somewhat narrow Alaskan Peninsula, air overlying the frozen ocean surface of the Bering Sea may take on continental characteristics and bring rather cold temperatures to the Cold Bay area. Although below zero (<-18°C) readings have been recorded from December to March, inclusive, below zero readings (<-18°C) are extremely rare.

(614) Winds reaching the station from the SW or E are quite light, rarely exceeding 13 knots. The open bay area to the SSE provides not only direct access to winds from that specific direction, but tends to provide, also, a funneling effect upon all winds of consequence approaching the Cold Bay area from the SW to the SE to produce strong SSE winds. From WNW to the NE, the land is relatively flat with considerable swamp and numerous small lakes. Winds from northerly directions are little influenced by this relatively flat terrain.

(615) The high frequency of cyclonic storms crossing the Northern Pacific and the Bering Sea are the dominant factors in the weather at Cold Bay. These storms account for the high winds and the frequent occurrences of low ceilings and low visibilities encountered at this station. Average wind speeds of 17 knots for 24-hour periods are very common; and frequently speeds averaging 26 knots for a 24-hour period are observed. Average monthly wind speeds of 17 knots or more are recorded at Cold Bay. These winds generally result from the strong pressure gradient develop-

ing between the Pacific High and the cyclonic storms in the Northern Pacific and Bering Sea.

(616) Because of the moderating effects of the large, nearby ocean areas, it is difficult to define the seasonal periods at Cold Bay. The beginning of spring is late; the vegetation does not begin to grow until late May or early June. August is regarded as the midsummer period and autumn arrives in early October. The greatest frequency of fog usually comes in the summer, with the foggy period extending from the middle of July to the middle of September. During the winter months visibilities are frequently restricted because of the blowing snow.

(617) The shortest day of the year at Cold Bay has 7 hours and 7 minutes of possible sunshine; the longest day has 17 hours and 27 minutes of possible sunshine. The abundant cloudiness realized in the area greatly restricts the amount of sunshine actually received. Cloudiness averages about nine-tenths sky cover the year around. Precipitation is frequent, but not abundant. Measurable precipitation is realized on more than 320 days per year, on the average. Annual mean precipitation is slightly over 36 inches (914 mm) with September through November being the wettest months when, on average, monthly precipitation is greater than four inches (102 mm). With an average of around two inches (51 mm), March and April are the driest months. Annual precipitation extremes include 23.41 inches (595 mm) in 1961 and 53.15 inches (1350 mm) in 1978. Snowfall is moderate. Annual average snowfall is about 62 inches (1575 mm) with the snowiest month being February. Snow has fallen in all months except July and August.

(618) (See page T-6 for **Cold Bay Climatological Table.**)

(619) A T-head pier with a 775-foot face, 2 miles NW of Delta Point Light, has depths of 30 to 33 feet alongside. The pier is marked by private lights at its NW and SE ends. In 1969, only 364 feet of the SE section of the pier was usable; the remainder is in partial ruins and condemned. In 1972, the State of Alaska, Department of Public Works, Division of Aviation, advised that the Cold Bay pier may be used only during calm weather, and that vessels using the pier must be prepared to move away as quickly as possible in the event of adverse wind and/or sea conditions. This action is necessary for protection of personnel and to prevent oil pollution should the pier give away.

(620) Because of the possibility of further weakening of the pier resulting from additional ice damage and/or high wind loads, the entire pier is subject to immediate closure with little or no notice at the discretion of the Cold Bay Airport manager. The pier is also closed to all vehicular traffic until further notice.

(621) An airstrip at the abandoned airbase at Cold Bay is used by commercial aircraft; an aerolight is at the airstrip. Radiotelegraph and radiotelephone communications are maintained.

(622) **Chart 16535.–Thin Point** (54°57.4'N., 162°33.2'W.), forming the W entrance to Cold Bay, is a low, grassy, gently rolling point. The extremity is a yellow eroded bluff with reefs, bare at low water, extending from its SW and SE points. Shoal water, marked by a lighted whistle buoy at the outer end, extends 1.3 miles S from the point.

(623) **Telegraph Hill,** 370 feet high, is about 2.5 miles NW from Thin Point. It is a grassy, symmetrical, dome-shaped hill that stands out conspicuously as the only high ground near the point. It is a valuable landmark, for it is often visible when the higher hills are cloud-covered.

(624) **Frosty Peak** is the sharp rocky summit of a snow- and ice-covered mountainous mass between Cold Bay and Morzhovoi Bay. It is 5,784 feet high and prominent from seaward, although its snow capped summit is seldom visible through the low-hanging clouds.

(625) **Walrus Peaks,** the S of two, 10 miles W of Thin Point, is a ragged 2,927-foot summit that is prominent when clear. Other peaks blend into the general mountain mass.

(626) **Thinpoint Cove** is just W of Thin Point. The E part of the cove is foul and should be avoided. Numerous kelp-marked reefs extend into the cove for 2.3 miles W from Thin Point. The W half of the cove is clear except for reefs fringing the shore. At the head of the cove is a series of shallow lagoons that extend N for several miles, and are connected with Thinpoint Cove by a small stream. The lagoons can be entered by small launches at high tide. The cove affords excellent shelter for small craft in N weather, but care should be exercised in entering to avoid the reefs to the S and W of Thin Point.

(627) The coast from Thinpoint Cove to Morzhovoi Bay is rather rocky, with an occasional sand beach and grassy bluffs rising from the water. The shore is fairly steep-to, and the shore reef that extends 200 to 500 yards offshore is heavily marked by kelp.

(628) **Sandy Cove** is a small bay 8 miles W of Thin Point and 2.3 miles E of Cape Tachilni. The head of the cove, which is at the foot of a deep valley making through the mountains, is clear. The E entrance point is steep-to. A reef extends S about 0.5 mile from the W entrance point. Good shelter in N weather is afforded small craft.

(629) **Sozavarika Island** (see chart 16549), low and grassy, is 6 miles S from Thin Point and 3.5 miles SW from Deer Island. The island is composed of shells deposited on rock. Between this island and Deer Island are many rocks and reefs. A stranded wreck is clearly visible on the NW shore of the island.

(630) **Umga Island,** about midway between Deer Island and Cape Pankof, is a small, grass-covered, rocky island about 250 feet high. It is surrounded by deep water. The route from Deer Passage to Cape Pankof passes N of Sozavarika and Umga Islands.

(631) **Rush Rock,** covered 6 feet, is 1.5 miles ENE from Umga Island, and nearly on range with the S side of Umga Island and Cape Pankof. This reef is of small extent and breaks only with a heavy swell.

(632) **Amagat Island,** off the entrance to Morzhovoi Bay, is high and bold, and shows as two parts; the SE part is 1,065 feet high and has a dome-shaped peak, while the other part is 660 feet high, broader and flat topped. The island is the nesting place for many birds. A fair anchorage may be had in 16 fathoms just NE of the island. A deepwater passage is between the island and Cape Tachilni.

(633) A shoal spot of small extent and covered 5¼ fathoms, is 1.7 miles SSW from Amagat Island. Deep-draft vessels should avoid this spot.

(634) **Kenmore Head,** forming the W entrance to Morzhovoi Bay, shows prominently from the usual coasting track. There is a small summit just W of the point which drops off with a vertical cliff to the water.

(635) **Cape Tachilni,** forming the E side of the entrance to Morzhovoi Bay, is an indefinite rounding point with grassy bluffs.

(636) **Egg Island,** 325 feet high, is a rocky precipitous island with a fairly definite summit. Shoal water, covered with kelp,

extends from the island to the mainland. The S side of the island affords temporary anchorage for small vessels while waiting for the NW winds to moderate before crossing Morzhovoi Bay.

(637) **Morzhovoi Bay,** the last bay indenting the coast of the Alaska Peninsula, is about 15 miles E of Isanotski Strait. The broad, deep entrance has no known dangers except a rock with 12 feet over it, 400 yards E of Kenmore Head. The land bordering the entrance is very mountainous, giving way to rolling tundra at the head of the bay. The bay forms a natural draw for the wind that sweeps in and out with great violence.

(638) **Littlejohn Lagoon,** N of **Reynolds Head,** is marked by a grassy islet off its entrance. The lagoon offers excellent protection in all weather, but can be entered only by small craft. About 5 feet can be carried through the crooked channel leading through the entrance, but once inside, there are depths of 4 fathoms, sticky mud bottom. Mooring dolphins may be near the entrance. Littlejohn Lagoon is occasionally used as a refuge for piledrivers and tenders.

(639) **Big Lagoon,** the large irregular lagoon at the head of the bay, has no entrance channel and is full of mudflats.

(640) **Middle Lagoon** leads to a large lake that is a spawning place for a large run of salmon. A cabin is at the E entrance point. The lagoon has no channel, and with a S wind, breakers extend across the entrance. During the autumn, great flocks of wild geese frequent the lagoon. From Middle Lagoon it is about 7 miles by the easiest route to the Bering Sea shore.

(641) **Boiler Point,** on the SW side of Morzhovoi Bay, marks the end of the mountain ridge extending from the entrance. A good anchorage, protected from all except NE winds, mud bottom, is in the cove just NW of the point.

(642) In N weather good anchorage with mud bottom may be had at any place along the N shores. In SW weather the cove near Boiler Point offers good protection, while in E weather fair anchorage may be had off Littlejohn Lagoon. Indifferent anchorage may be had in the cove just NW of Kenmore Head.

(643) The shores from Kenmore Head to Kabuch Point are bold and mountainous, with deep water extending close-to. Ikatan Bay and Isanotski Strait separate Unimak Island from the Alaska Peninsula. Isanotski Strait, known locally as False Pass, is in general used for fishing boats and other craft of less than 10-foot draft when bound for Bering Sea points. Vessels up to 419 feet in length have entered the strait and docked at the False Pass cannery which is on the Unimak side, 3.5 miles within the entrance. The region is approached by steamers from the inside route along the Alaska Peninsula through Deer Passage, from seaward through the passage between Sanak Island and Hague Rock, and from the W through the passage between Cape Pankof and Sanak Island.

(644) **Pilotage, Isanotski Strait**.–Pilotage, except for certain exempted vessels, is compulsory for all vessels navigating the inside waters of the State of Alaska. (See Pilotage, general, indexed as such, chapter 3, for details.)

(645) The Alaska Peninsula is served by the Alaska Marine Pilots and Southwest Alaska Pilots Association.

(646) Vessels using Southwest Alaska Pilots Association pilots and en route to Isanotski Strait (False Pass) can meet the pilot boat about 1.5 miles NW of Ikatan Point (54°46.5'N., 163°11.0'W.).

(647) The pilot boats can be contacted on VHF-FM channel 16 or on a prearranged frequency between pilot and agent/vessel.

(648) **Ikatan Bay,** on the N side of the Ikatan Peninsula, is deep and free from dangers except for the area N of Sankin Island.

(649) **Ikatan Point,** the N end of Ikatan Peninsula, is bold and rocky. There is indifferent anchorage just W of the point, but vessels are apt to drag off into deep water.

(650) **Ikatan Point Light** (54°46.5'N., 163°11.1'W.), 81 feet above the water, is shown from a skeleton tower with a triangular red daymark on the N tip of Ikatan Point.

(651) **Sankin Island,** about 1 mile from the N shore of Ikatan Bay, is high and rocky. In the passage between the island and the mainland is a reef awash at low water. For several years, during the early part of the fishing season, two or three floating salmon canneries have operated from the anchorage just W of Sankin Island. After the middle of July, they usually move to the Bristol Bay region.

(652) The SW side of Ikatan Bay is separated from Otter Cove by a sandy isthmus 20 to 30 feet high; a shifting river enters the bay at the middle of this lowland and the flat off its mouth drops off abruptly to deep water. Several abandoned fish traps are along this shore. In September 1980, it was reported that the fish traps along the S and SW shores of Ikatan Bay had been removed but stumps may remain; caution is advised.

(653) **Isanotski Strait (False Pass),** between the end of the Alaskan Peninsula and Unimak Island, has its S entrance at the NW end of Ikatan Bay.

(654) **Isanotski Strait Light 2** (54°48.9'N., 163°21.7'W.), 17 feet above the water, is shown from a square frame with a red triangular daymark on the spit off high and rocky **Kabuch Point** at the E entrance to Isanotski Strait. A reef that uncovers makes off a short distance from the point. The W side of the entrance is a low sand beach.

(655) **Whirl Point,** on the Unimak side about 1 mile within the S entrance to Isanotski Strait, is bold and marked by a light. A reef that uncovers makes off a short distance from the point, then drops abruptly to deep water. At high water the end of this reef is made evident by the swirls of the current.

(656) A private wharf owned by a fish processing company is on the Unimak Island side at **False Pass,** 3.5 miles N of the S entrance to Isanotski Strait. The wharf has a 60-foot face and a depth of about 26 feet alongside. A general store is maintained the year round. A mail plane calls daily except Sunday. The fish processing company office maintains radio and telephone communications (call sign, KIJ–23, False Pass, on 4125 kHz and VHF-FM channels 16 and 6). Gasoline, distillate, fuel oil, and water are available year round. There is also a small oil dock with shallow water along its face. The ebb current flowing S sets toward the low flat point just south of the wharf, and with such a current, care must be taken to avoid being set onto this point on leaving the wharf. Because of strong currents and changeable eddies, this wharf must always be approached with caution.

(657) A public dock is about 0.5 mile NW of the fish processing wharf and has a reported 175-foot face with 28 feet reported alongside. It is a scheduled stop on the Alaska Marine Highway System and water and electricity are available.

(658) **Isanotski Strait Light 6** (54°51.4'N., 163°23.5'W.), 21 feet above the water, is shown from a skeleton tower with a red triangular daymark on Island Rock just off Nichols Point.

(659) **Routes, Ikatan Bay to False Pass.–**In entering Isanotski Strait from Ikatan Bay the Unimak side should be favored to avoid the reef off Kabuch Point. Follow the Unimak shore until almost up to Whirl Point; this shore drops off abruptly and can be

passed close-to. Off Whirl Point, the tidal current may attain a strength of 7 knots when a tidal current of 4 knots is predicted off the wharf of the fish processing company at False Pass. The reef making off Whirl Point, when covered, is generally made evident by swirls of current. During the ebb current this reef deflects a violent current directly against the axis of the pass, tending to turn a northbound vessel toward the E shore of the strait. Careful steering is required to offset the effect of this current.

(660) After rounding the reef at Whirl Point stand directly for the fish processing wharf, taking care to avoid being set too near either shore; avoid the 3-foot ledge that extends SW from the point 0.4 mile S of **Nichols Point,** and **Island Rock** 0.2 mile WSW of Nichols Point. A range consisting of the end of the wharf and some mark on shore back of the wharf would be helpful along the reach from the turn at Whirl Point direct to the wharf. If unable to go alongside, a temporary anchorage may be had in the cove just N of the wharf.

(661) A vessel must be able to make 11 knots to be able to stem the maximum current. Large vessels should enter only at slack water.

(662) **Currents.–**(See the Tidal Current Tables for daily predictions at Isanotski Strait.)

(663) **Routes, False Pass to Bering Sea.–**A route, partially marked by buoys, can be taken from the food processing company wharf at False Pass through Bechevin Bay to the Bering Sea. From abreast the wharf, steer a course to the upper end of the buoyed channel through Bechevin Bay about 1.1 miles WSW of the N extremity of Traders Head, thence follow the buoyed channel through the bay and across the entrance bar to the Bering Sea.

(664) Mariners are advised that the approach to Bechevin Bay from the Bering Sea is marked by buoys but is very changeable. Vessels passing N through Isanotski Strait should call at the food processing company office at False Pass to obtain information concerning the Bering Sea approach to Bechevin Bay.

(665) Transiting in either direction requires extreme caution because of the presence of shoal bars at the edge of deep water between Chunak Point and Bechevin Bay Entrance Buoy BB. The bars shift frequently. The passage requires local knowledge. Vessels familiar with the area transit with historically gathered Loran-C coordinates that are continually updated. Vessels with a draft greater than 14 feet should not attempt passage; vessels with a lesser draft should try to time transit at or near low water slack current. The safety factor represented by a rising tide is a requirement in this area.

(666) **Tides.–**The tides at False Pass are somewhat irregular and become diurnal at the time of the Moon's maximum declination. The diurnal range of the tide is 4.1 feet.

(667) **Ice.–**As a usual thing, the strait is open to navigation throughout the winter, but during the winter 1923-24 the pass was entirely blocked with ice and the mail steamer could not get beyond Sankin Island. At this time drift ice extended from Cape Pankof to Sanak Island, a very unusual condition.

(668) **Traders Cove** on the E side of Isanotski Strait, is a good anchorage.

(669) It has been reported that during NE gales, the wind in the locality of Traders Cove is deflected to such an extent as to blow in an opposite direction.

(670) **Bechevin Bay,** which is an enlargement of the N end of Isanotski Strait, is shoal and full of sand and mudflats. The bay enters the Bering Sea between **Chunak Point** on the W, and **Cape Krenitzin** on the E. **Cape Krenitzin Light 7** (55°03.8'N., 163°25.5'W.), 30 feet above the water, is shown from a skeleton tower with a square green daymark on the W side of the cape. The approach to Bechevin Bay from the Bering Sea is marked by buoys; local knowledge is advised because of the constantly shifting shoals in this entrance and along several areas of the channel throughout the bay.

(671) **Hotsprings Bay,** a large bight in the SE corner of Bechevin Bay, is a fair anchorage sometimes used by fishermen. A small reef, awash, is in the entrance, about 0.4 mile NE of the N end of Traders Head, but good water lies on either side of the reef. The bottom is generally black mud and moss.

(672) **St. Catherine Cove** is the W bight in the N end of the strait. In former years there was a channel leading into the cove affording anchorage for small schooners, but it has shoaled and the cove is nearly bare at low water.

(673) **Rocky Point**, about 4 miles SE of St. Catherine Cove, is marked by a light.

(674) About 2.7 miles NW from **Rocky Point** and 0.5 mile offshore is a reef bare at extreme low water. Several local boats have struck this reef.

(675) **Ikatan Peninsula,** the SE extremity of Unimak Island and S of the end of the Alaska Peninsula, is about 10 miles long and is composed of several mountain masses separated by low depressions. The wind blows through the low depressions of the land with great force. The S shore of the peninsula has rocks and breakers.

(676) **Cape Pankof,** the E end of Ikatan Peninsula, is a sheer rocky headland consisting of a single 1,243-foot peak dropping immediately to a bluff that forms the SE side of the cape.

(677) The slope of the top of the bluff descends gradually from the peak to the N, whereas to the S the descent is broken in the form of vast steps. From the S, the peak has a sharp outline and an abrupt rise from the sea.

(678) Another prominent headland, 1,070 feet high, rises precipitously from the bluffs on the S shore of Ikatan Peninsula, 1.5 miles W of the S extremity of Cape Pankof. The mountain masses of the two headlands are separated by a low depression 0.8 mile W of the cape. The bluffs are rust and gray in color. The slopes are grass covered in the summer with frequent bare spots. On the higher bluffs is evidence of small rockslides.

(679) A shoal with a least depth of 7 fathoms has been reported 2.7 miles 022° from the southernmost bluff of Cape Pankof (54°39.5'N., 163°03.7'W.). A depth of 7½ fathoms is about 10 miles SW of Cape Pankof in 54°31.5'N., 163°14'W. This shoal, about 350 yards across, is surrounded by depths of 25 to 30 fathoms (see chart 16520).

(680) A submerged rock that breaks with a light swell during low stages of the tide, is about 1 mile W from the southernmost bluff of Cape Pankof (54°39.5'N., 163°03.7'W.), and about 300 yards offshore. Another offshore danger is off the E point of the entrance to West Anchor Cove.

(681) **Pankof Breaker,** a sharp pinnacle rock with ¾ fathom over it, is a little over 2 miles 053° from the SE point of the entrance to East Anchor Cove. During the summer the rock seldom breaks. Depths of 12 to 14 fathoms are close to the rock. A buoy is 400 yards E of the breaker.

(682) **East Anchor Cove,** on the N side of Cape Pankof, is a good anchorage except for winds from the N to SE, through E. The cove is large and easily entered. Pankof Breaker is the only danger in the approach. An abandoned fishtrap is just inside the

SE entrance point. Anchorage may be selected as desired in 7 to 10 fathoms.

(683) **Westdahl Rock,** covered 3 fathoms, is 7.9 miles 104° from Cape Pankof Light. It is a rocky patch of small extent.

(684) **Bird Island,** about 0.5 mile in extent, is the most prominent landmark between Capes Pankof and Aksit. From the S, the island appears as a single elevated rocky mass, rounded but somewhat ragged in outline; the highest point, 775 feet, is a knob readily identified. Steep sides, fringing rocks, and breakers make a landing very difficult. The only practical landing place is on the N tip which has a steep beach of rather coarse gravel.

(685) A bar, consisting of a submerged reef, connects Bird Island with the W point of the entrance to Dora Harbor. The greatest depth is 5¼ fathoms, and passage is not recommended. This bar depth is on the line passing through the 1,760-foot peak 1.6 miles N of Cape Aksit and the summit on the W point of the entrance to West Anchor Cove. The line crosses the bar a little more than halfway from the point, on the N, to Bird Island. A submerged rock on the bar is a little less than halfway from the point to the island. The rock does not break in ordinary weather.

(686) **West Anchor Cove,** the largest indentation on the S side of Ikatan Peninsula, affords indifferent anchorage. Anchorage in East Anchor Cove is preferable. The anchorage for all but small craft is confined to the open part of West Anchor Cove, which is exposed to S and SW weather, always accompanied by heavy ocean swells. The bottom in West Anchor Cove is fine, dark, gray sand, which is good holding ground. The entrance is wide and clear, but rocky reefs extend from the points on either side. A narrow shelf of rocks extends along the shore at the E point of the entrance, the outer edge of which shows at half tide and probably breaks all the time. A rock covered 2½ fathoms is off this ledge, 0.5 mile SW from the point. This is the outermost danger in the approach from the E.

(687) A prominent flat rock, 4 feet high, is 0.5 mile off the round point on the E side of West Anchor Cove and about the same distance inside the entrance. This feature marks the W limit of the dangers on the E side of the cove and has been found useful for making the anchorage in thick weather. A detached shoal of 2¾ fathoms is in the middle of the inner part of the cove about 1.2 miles from the head. The shoal marks the upper limit of anchorage for all but small craft. Rocky ledges extend from the N and S shores but not over 300 yards. A prominent rock, 46 feet high, is close off the E shore, about 1.2 miles NE of the E entrance point.

(688) The bight between West Anchor Cove and Dora Harbor is small and exposed. Rocky reefs extend about 400 yards from the shore off the entrance points. A prominent rock, 32 feet high, is 330 yards off the W side of the headland at the E end of the bight. A prominent rounded rocky hill, 788 feet high, dominates the headland.

(689) **Dora Harbor,** on the S side of Ikatan Peninsula, provides the only good anchorage with protection from all winds and sea on the S side of Unimak Island, but the harbor is limited to small vessels. The entire shore is fringed with ledges, partly bare at low water, to a distance of about 300 yards. The reef extending 0.3 mile W from the E point of the entrance and the bar from the W point toward Bird Island afford protection from ordinary S and W swells at the outer anchorage, but a heavy swell from S is uncomfortable. The outer anchorage, however, is seldom used.

(690) Low tableland terminates in bluffs at the shores on both the E side of Dora Harbor and the middle point of the W side.

(691) The inner harbor of Dora Harbor is a slight expansion at the head with depths of 9 to 12 feet in the middle. A heavy swell from the S will cause this anchorage also to be uncomfortable.

(692) In entering Dora Harbor care should be taken to avoid a rock, that uncovers, about 0.3 mile 220° from the E point at the entrance. The rock is detached and 200 yards from the edge of the shore reef. In calm weather, when the rock is covered, a light swell may not cause a breaker. Favor the W side in the entrance to avoid the reef extending about 0.3 mile W from the point on the E side of the entrance, and then steer midharbor courses to the inner harbor, where anchorage with somewhat restricted swinging room is afforded vessels of 7 feet or less draft. Care must be taken to hold the midharbor course in entering the inner harbor in order to avoid reefs that make out 325 yards from the points on each side.

(693) **Otter Cove** is an open bight between Ikatan Peninsula and Cape Aksit. The shores on both sides are characterized by high bare rocky cliffs. The sand beach forming the head is bordered by a series of grass-covered dunes. Other dunes in the form of ridges are farther inland.

(694) Otter Cove is exposed to S winds and ocean swells, and always has a heavy surf. N winds blow with great violence over the low isthmus separating it from Ikatan Bay. The only safe boat landing is in the NE corner of the cove. Two rocks, close together that uncover 1 foot, are over 0.5 mile from the shore of Ikatan Peninsula and 3.5 miles NE from Bird Island.

(695) The story has been handed down among the natives that a channel once existed between Otter Cove and Ikatan Bay and that Russian vessels once sailed through.

(696) **Cape Aksit,** the W point of Otter Cove, is bold and rugged.

(697) Cape Lazaref and the S coast of Unimak Island are described in chapter 7.

(698) **Charts 16520, 16547.–Sanak Islands,** the southwesternmost group of islands along the Alaska Peninsula, cover an area 20 miles long and 10 miles wide. The group consists of two large islands, Sanak and Caton, and numerous small islands and rocks, all of which are bare of trees.

(699) **Sanak Peak,** part of the mountain mass at the NW end of Sanak Island, is 1,740 feet high and a prominent landfall. A 787-foot peak, 1.5 miles to the NW, is often visible when Sanak Peak is obscured by clouds. A ridge rises to more than 200 feet on the E side of the mountain mass, but most of the remaining land area in the group is low in comparison, being over 100 feet high on the N side, decreasing to less than 40 feet high among the S islands and rocks.

(700) Anchorage at Sanak Islands is suitable for small or moderate-sized vessels. Caton Harbor affords the only shelter from all winds.

(701) Dangers along the N side of Sanak Islands are within 0.5 mile of the shore, except **Crowley Rock,** 1.5 miles offshore 348° from Sanak Peak. This rock has several small pinnacles with a least depth of ½ fathom over them. The rock, not always marked by kelp, only breaks in a disturbed sea and occasionally shows a prominent slick.

(702) Foul ground of numerous reefs, islands, islets, shoals, and covered and uncovered rocks extends almost 6 miles S and over 12 miles W of Sanak Islands; heavy breakers extend a considerable distance offshore. **Aleks Rock,** 16.7 miles 241° from Sanak Peak, is covered 1½ fathoms and is the farthest outlying known

rock SW of Sanak Islands. A 7½-fathom pinnacle is 4 miles N of the rock.

(703) The harbors on the S side of the Sanak Islands, except possibly Peterson Bay, should not be approached without local knowledge.

(704) **Caton Island,** at the E end of the Sanak group, is rolling and grass covered. Most of the beaches are composed of rocky ledges, or boulders and gravel. Steep and prominent bluffs are on the NW point. The low E side and the S side of the island are fringed with rocky ledges up to 1 mile offshore.

(705) **Whale Bay,** on the NE side of Caton Island, is extremely shoal.

(706) Temporary anchorage in S winds can be had W of Caton Island and S of **Lida Island.** Approaching the anchorage from E, stand in near the visible rocks off the E end of Lida Island, taking care to avoid the partially covered reef, nearly 0.5 mile E of Lida Island, that extends N from Caton Island. Anchor about 0.4 mile from Caton Island, and 0.3 to 0.5 mile S of Lida Island, in 6 to 7 fathoms, sandy bottom. Care should be taken not to approach the S side of the anchorage.

(707) If the anchorage S of Lida Island is approached from W, steer for the SW side of Caton Island on **144°,** passing about 0.5 mile S of Lida Island, and leaving a rock that uncovers, 0.5 mile N from Wanda Island, about 0.4 mile on the starboard hand, and anchor as directed above. The W end of Lida Island should not be approached closer than 0.5 mile.

(708) **Caton Harbor,** between Sanak Island on the E and Caton Island on the W, is large and affords anchorage in 2 to 3 fathoms, sandy bottom; it is protected on the S by **Elma Island** and on the N by the islands and reefs between Caton Island and Sanak Island. The harbor is protected from all swells, and schooners of considerable size have wintered here. These waters provide the best all-weather anchorage for small vessels in the Sanak Islands. Water in small quantities may be obtained.

(709) **Princess Rock,** off the W end of the islet in the center of Caton Harbor, is the most prominent feature in the vicinity. It is high and grassy on top; extensive reefs surround the rock.

(710) The best entrance to Caton Harbor is from the N through a narrow channel close to the W end of Caton Island. Proceed as directed for entering the anchorage S of Lida Island from W, and when well past the rock that uncovers, 0.5 mile N of **Wanda Island,** bring the S side of the rock that uncovers in range with Northeast Point astern, and stand in, keeping the range astern, course **125°,** until close to Caton Island. Then keep the bare rocks and kelp projecting from Caton Island close aboard on the port hand, but do not approach the kelp on the starboard hand; the least depth in the narrowest part of the passage is 3½ fathoms, shoaling inside to 3 fathoms. When past the rocks on the port hand, steer **193°** for about 0.5 mile, and anchor in about 3 fathoms with Princess Rock in line with Sanak Mountain, bearing 294°. This anchorage is about 0.5 mile from Caton Island, and the same distance from the nearest reef on the W side. Anchorage, with probably better shelter from NE gales, can be made off the sand beach on Caton Island, just inside the narrow entrance.

(711) To enter Caton Harbor from the S through **Devils Pass,** W from Elma Island, or through **Southeast Pass,** E of Elma Island, requires local knowledge to avoid the reefs and breakers. These passes should not be attempted by a stranger. Surveys indicate a controlling depth of 1¼ fathoms in the approach to Devils Pass with deeper water through the narrow part of the pass. Tide rips in Devils Pass are at times dangerous to small craft.

(712) **Sanak Island,** largest of the Sanak group, has rocks and reefs along its shores and is indented by several harbors that can be used by small vessels. The westernmost breakers of the rocks, which form a continuous barrier from the W side of the island, are 2 miles offshore, or 1 mile W from the northwesternmost bare rocks of the barrier. Cattle are raised on the island.

(713) **Finneys Bay,** at the NE end of Sanak Island, is obstructed by rocks; steep and prominent rocky bluffs are NW of the bay.

(714) **Northeast Harbor,** on the NE side of Sanak Island, affords temporary anchorage about 0.2 mile SSE from 100-foot-high **Northeast Point,** in 13 fathoms. **Eagle Rock,** near the middle of the harbor, is 58 feet high and surrounded by a ledge that uncovers and a reef that connects it with the head of the harbor. A reef that uncovers extends along the N side of the harbor; a 24-foot-high rock is 0.4 mile W of Northeast Point. Small vessels may anchor between Northeast Point and Eagle Rock, with Cherni Island, 13 miles NE, just open of Northeast Point, in 6 to 9 fathoms, sandy bottom. The harbor is exposed to E winds. Water can be obtained.

(715) **Johnson Bay,** 1.5 miles W of Northeast Point, has an inner harbor for small craft, where there is a fishing station. Vessels may anchor just inside the entrance to the bay, favoring the E side, in 9 fathoms, with protection from S and W winds. Rocks are close to the W entrance point.

(716) **Unimak Cove,** 2.5 miles W of Northeast Point, is an unimportant open bight.

(717) **Pavlof Harbor,** 4 miles W of Northeast Point, is reported to be a good shelter for small craft, but local knowledge is required to enter because of reefs at the entrance. **Pavlof Harbor** is a village at the head of Pavlof Harbor.

(718) **Murphys Cove,** 7 miles W of Northeast Point, is protected by a reef and affords shelter for boats of local fishermen.

(719) **Sanak Harbor,** at the NW end of Sanak Island, affords restricted anchorage for small vessels with protection from S and W weather, but is exposed to winds from NW to E, and a swell makes in with strong W winds. Temporary anchorage may be had about 0.2 mile NE of **Point Petrof,** in 10 fathoms. The diurnal range of tide is 6.6 feet.

(720) Approaching Sanak Harbor from N, steer for the 787-foot peak of Sanak Mountain on any course between **140° and 176°,** taking care to avoid Westdahl Rock. When off the entrance, steer **193°** for the middle of the entrance and anchor in midchannel in 3 to 4 fathoms. The covered rocks off the entrance points are marked by kelp. Take care to avoid the 2¾-fathom spot, 0.2 mile N of the E entrance point, and a rock, covered 7 feet, 200 yards off the E shore 300 yards inside the entrance.

(721) A bight on the E side of **Clifford Island** (54°23.0'N., 162°47.0'W.), on the S side of Sanak Island, affords anchorage for small craft in 2½ fathoms, rocky bottom. Local knowledge is necessary to reach the anchorage because of the numerous rocks and reefs on the S side of Sanak Island.

(722) **Peterson Bay,** on the SE side of Sanak Island, is well protected from all but SE winds, especially for small vessels of 12 feet or less draft that can anchor well inside the bay. It is reported that during NE winter gales a heavy swell makes into the bay. In the widest part of the bay near the head are depths of 2 to 2¼ fathoms. A 1¼-fathom spot is in midchannel about 0.5 mile inside the S entrance point. Another shoal of 1¾ fathoms, marked by heavy kelp, is about 350 yards off the S shore and about 0.2 mile inside the S entrance point. The diurnal range of tide is 6.2 feet.

(723) In approaching Peterson Bay from E, give the E and SE sides of Caton Island a berth of about 2 miles to clear the reefs and the breakers that extend more than 1 mile offshore, and steer **262°,** passing 1 mile S of **Umia Island** and **Telemitz Island.** When Telemitz Island is abeam, bring the tangent of the N side of Peterson Bay in line with the slight saddle between Sanak Peak and the E shoulder of Sanak Mountain, and run in on this range, course **318°.** When the S point of the bay is about 0.7 mile distant, haul N a little so as to bring the N side of the bay in line with the extreme SW tangent of Sanak Mountain, and run in on this range, course **311°,** until the S point at the entrance bears 177°. Then steer **294°** for the middle of the bay but avoid the 1¼-fathom spot S of the course, and select anchorage according to draft.

(724) **Charts 16547, 16540.–Sandman Reefs,** a large area of foul ground with numerous islands, islets, and rocks, extend from the Pavlof Islands and Deer Island on the N almost to the Sanak Islands on the SW. This area has not been completely surveyed and should be avoided.

(725) **Pinnacle Rock** and **Clubbing Rocks,** on the E and W side of Sandman Reefs respectively, are Steller sea lion rookery sites. There is a 3-mile vessel exclusionary buffer zone surrounding these rocks. (See **50 CFR 223.202,** chapter 2, for limits and regulations.)

(726) **Hague Rock,** at the S end of Sandman Reefs, is 47 feet high, rocky, and grass covered, with deep water close to the S side. A reef extends over 1 mile NW from the rock. **Hague Rock Light** (54°33.1'N., 162°24.1'W.), 60 feet above the water, is shown from a square frame with a red and white diamond-shaped daymark.

(727) The wide and clear passage between Hague Rock and Sanak Islands is used by large vessels going between the Pacific Ocean and Ikatan Bay.

(728) **Cherni Island,** 5 miles N of Hague Rock Light, is grass covered, and shows as rolling land in the N part gradually rising to two prominent 162-foot sharp hills near the S end. The SW side of the island is a bare rock cliff, rising to 90 feet. There is a good small boat anchorage at the N end of the island; strong N winds here only cause small swells at high tide. The anchorage can be approached only from the N with local knowledge. Cattle are reported on the island.